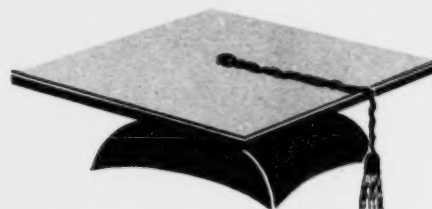


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YEAR-ROUND
OPERATION
OF
UNIVERSITIES
AND
COLLEGES



A preliminary research report
on the practices and problems
of year-round calendar systems,
with particular reference to
the Canadian scene.

David C. Webb

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and problems of year-round calendar systems,
with particular reference to the Canadian scene.**

DAVID C. WEBB
Director of Research,
Canadian Foundation for Educational Development

**CANADIAN FOUNDATION FOR
EDUCATIONAL DEVELOPMENT**

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Foreword

This is the first report issued by the Canadian Foundation for Educational Development, a non-profit organization recently established with the purpose of aiding through research in the development of higher education in Canada. The aim of the Foundation is not to propagandize any particular point of view, but to initiate and carry out studies into areas of educational concern.

The year-round operation of colleges and universities was chosen as the subject matter of this first study, as it was believed that a useful and timely service would be performed in sorting fact from fiction in this important development in the field of higher education. With thirty-eight institutions of all sizes in the United States now operating on a year-round basis and a further eighty-five actively considering changing over to the new system, there is sufficient factual material available to dispel some of the controversy that has grown up around the subject. In the U.S. this new calendar system has already proven to be one answer to the problem of handling rapidly increasing enrolments — it could do the same in Canada.

The study reviews the crisis of numbers facing Canadian higher education in the years ahead; it notes some misconceptions that have grown up around the subject of year-round operation, and looks at the rationale behind the concept, as outlined by major proponents of the idea; it describes both theoretical and operating year-round calendars, and concludes with an examination of some of the problems that may be met.

The report is written from an overall viewpoint and does not take into account any special circumstances that may exist in certain areas — as, for example, in Quebec where a Royal Commission is presently undertaking a study into the entire spectrum of education in that province.

The Foundation requests comments, critical or otherwise, and is open to suggestions for other studies into areas of educational concern.

Please direct correspondence to:

The Director of Research,
Canadian Foundation for
Educational Development,
700 Place Ville Marie,
Montreal 2, P.Q.

Frank B. Common Jnr., Q.C.
President.

April, 1963

La "Canadian Foundation for Educational Development" désire manifester à ses amis québécois son vif intérêt dans le Rapport de la Commission Parent et la "Foundation" espère pouvoir contribuer au futur développement de l'éducation dans La Belle Province.

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CHAPTER I

The Crisis of Numbers

No report or study touching upon any part of higher education in Canada today, can avoid referring to the 'crisis of numbers' which is facing our universities and colleges. This is one inescapable fact that provides the background against which these studies must be written — and this report is no exception.

If one can even pinpoint the exact moment at which a crisis started, or people were made aware that one had started, it came for Canadian education when Dr. Edward Sheffield (then statistician in the Education Division of the Dominion Bureau of Statistics, now Research Officer for the Canadian Universities Foundation) presented a paper to the 1955 National Conference of Canadian Universities, entitled "Canadian University and College Enrolment Projected to 1965."

This seemingly innocuous document dropped like a bombshell into the university world, which had then only just recovered from the 'battle of the bulge' — i.e., returning veterans. The statistical material presented by Dr. Sheffield showed inescapably, that in the following ten years Canadian universities would be faced with an increase in enrolment for which their facilities were wholly inadequate.

During the next year, Dr. Sheffield's document was widely publicised in the educational world, and its impact was reflected in the title chosen for the 1956 annual meeting of the National Conference of Canadian Universities — "Canada's Crisis in Higher Education." This meeting followed closely on the National Conference on Engineering, Scientific and Technical Manpower, which showed grave deficiencies in our scientific education when compared to that of the Soviet Union and U.S.A. Both received widespread coverage in the press, on radio and television, and

succeeded in bringing home to the general public and to the educationists themselves, the enormity of some of the problems about to be faced by our universities and colleges and, through them, by all of Canadian society.

These problems had then, and still have, one common base — the growing number of people wishing to obtain a college education. Or, in the obverse sense, the rapidly growing number of people with higher education required by an increasingly complex technological society wishing to maintain or reach a competitive position *vis a vis* other industrially advanced nations.

Either way, the situation facing the universities was grave indeed. On the one hand, lay the calculations of the National Conference on Engineering, Scientific and Technical Manpower, which showed that if Canada was to be in a similar position in all faculties in 1980 to that reached by the U.S. and the Soviet Union in 1956, she would be required to have from 375,000 to 495,000 students enrolled in her colleges and universities at that time.^{1*} To maintain the then existent student-faculty ratio, this would mean a 350% increase over 1956 in university staff — i.e., 38,000 additional teachers.² The additional capital cost to provide the required facilities was estimated at \$1,750,000,000 in 1956 dollars.³

On the other hand, lay the universities' own estimates, namely, that by 1965-66 they would have 123,573 students — 58,259 more than in 1955-56 — requiring an increase in staff of more than 4,000 and costing an additional \$285,000,000 for new buildings and facilities.⁴

With the benefit of hindsight, we now know that what appeared to be a crisis in 1956 was only the introduction to a problem which has grown in size and intensity from year to year, and the full force of which is yet to be felt. The enrolment predictions for 1965-66, were in fact exceeded by more than 5,000 students in 1961-62.⁵ Capital expenditure, estimated at \$285,000,000 over the ten years to 1965, totalled nearly \$300 million in the five years to 1960-61.⁶ Annual capital and operating expenditures, standing at \$115 million in 1956-57, had risen to \$282 million in 1960-61, were predicted to rise to nearly \$700 million in 1965-66.⁷ The cost per student place, estimated at \$5,700 in 1956, had risen to \$7,000 in 1962.⁸

Statistically projected enrolment figures have consistently proven low and been revised upward.⁹ The latest projection by Dr. Sheffield indicates that enrolment will rise from 114,000 in 1960-61

* References may be found at the end of the chapter, p. 12.

to 311,600 in 1970-71.¹⁰ In the first year where comparison between actual and projected figures is possible (1961-62) even these new figures are some 3% low.¹¹

An idea of the 'agonized reappraisal' which this rapid growth has caused in administrative plans, may be seen in an address by Dr. Hall, president of Western University, to the Western University Fund for 1963:

The question is: What is Western's role in this crisis? Having made the very firm decision not long ago that we would remain a relatively small university, maximum 5,000, we must remember that Western doubled in size between 1945 and 1953 and doubled again between 1953 and 1961. What do we do now? The responsibility of Western is almost "moral", and we have to look at it in that respect. Regardless of our desires or ambitions, in the face of the fantastically great problem, our decision is to double again for the third consecutive time in an eight-year period, to accommodate at least 9,000 students, including the enrolments of our affiliated colleges.¹²

To double again for the third consecutive time in an eight-year period. This is what one university has had to do in order to cope with the situation as it exists now, at a time when only 10.4% of the college-age population in Canada are attending college — approximately one half of the percentage of that in the United States.¹³ Should the Canadian percentage increase in the near future to anything approaching that of the U.S. — and some educationists believe that it may¹⁴ — then existing and projected facilities will be swamped by some 500,000 students.

Where will the staff be found? Where will the money come from? Even allowing that enrolments proceeds as projected (i.e., to 182,900 in 1965-66; 311,600 in 1970-71) it has been estimated that approximately 2,000 new teachers *per year* will be required in 1965, rising to 3,500 in 1970 — a total of 23,000 over the ten-year period 1960-1970.¹⁵ (The same source indicates that of the 2,300 teachers and research workers recruited in the years 1956-58, 57% were recruited in Canada and 43% came or returned from other countries.¹⁶ Studies are now underway to determine whether these sources will be sufficiently fruitful to supply the demand in the years ahead.)

From the financial viewpoint, it was noted above that annual capital and operating expenditures could rise from \$282 million in 1960-61 to nearly \$700 million in 1965-66. Even the recently-announced increase from \$1.50 to \$2.00 per head in the per capita grant to universities will be grossly insufficient to cover this increase in costs. (It was estimated in 1961, for example, that if the grant

per capita of the population had risen in proportion to university operating costs, it would be close to \$2.40 in that year.¹⁷)

There appears to be some duality in the thinking of Canadian university administrators on this point, for, having estimated a considerable and continuous increase in enrolment figures, they forecast a drop in capital expenditures. Their forecast figures from 1961-62 to 1965-66, being respectively, 88, 105, 104, 86 and 71 million dollars.¹⁸ Whereas, capital expenditures when projected on an enrolment basis, show a steady increase from \$132 million to \$309 million over the same period.¹⁹

This, then, forms the nucleus of the 'crisis' facing Canadian universities and colleges. The question is, what can be done to cope with the situation?

Three methods of procedure

There is, of course, no all-embracing answer to the question posed above. With the danger of over-simplifying the case, however, it appears that there are three major methods of procedure open to colleges and universities: 1. To limit enrolments through increased selectivity. 2. To enlarge and increase physical facilities. 3. To make more effective use of existing facilities. All three may, of course, be used separately or together.

Most universities and colleges are already attempting to limit enrolments and cut down on the wastage of drop-outs (which are at a high level in Canadian institutions²⁰) through increased selectivity and higher admission standards.²¹ There are, however, limitations to this policy. Studies undertaken independently in Alberta and Ontario show that a high proportion of the brightest high-school students do not go on to college, at present.²² It is ~~safe to assume that as the trend toward gaining a college education~~ increases more and more of these students will wish to continue, thus placing additional pressure on even the most selective institution.

There is also the question of basic educational philosophy in a democratic nation. Apart from questions in the realm of social morality (e.g., do the brightest students necessarily make the best citizens? Should educational institutions aim to establish an intellectual elite?) to which each institution must find its own answer, there is also the question of political reality. Noted one U.S. authority: "We have to recognize that, ultimately, it is not faculty members or educational administrators who decide on objectives. These are decided by the citizenry at large. They can be led; they can be influenced; but, ultimately, they register their decisions

through either political votes or dollar votes." ²³ Though this may not legally control certain private institutions ²⁴ whose charter does not prevent them from closing their doors to entrants who have achieved a certain standard in provincial or other examinations, it must, nonetheless, affect the thinking and practice of universities and colleges in general.

There is, then, a limit to the extent to which enrolments can be held down by increased selectivity. J. J. Deutsch, Vice-Principal (Administration) Queen's University noted: "How far the raising of standards will actually reduce the numbers applying for admission to our universities and colleges is an uncertainty, but if it goes very far, it will simply demonstrate that the universities are not capable of dealing with the demands made upon them." ²⁵

The second of the suggested methods of procedure is to enlarge and increase physical facilities; the third, to make more effective use of existing facilities. These methods are not mutually exclusive and most universities will undoubtedly attempt to use both. There is some question, however, as to the extent to which it is possible to enlarge facilities. Apart from the fact that many city campuses are already overcrowded and prevented from further expansion by other buildings and/or by prohibitive cost, there is also the question of time. New facilities take time to design and build, and time is rapidly running out. There was a total of approximately 73,000 students at Canadian colleges in 1955-56; the projected increase over the five years 1962-63 to 1967-68 is more than 90,000 — i.e., from 137,000 to 227,500 students. ²⁶

It is likely, therefore, that in the next decade considerable stress will be placed on finding more effective means of using existing facilities. There are two major methods of doing this: one is to increase the use of classroom space through more effective scheduling and/or increased use in 'off-hours' — i.e., early morning, lunch-hour, late afternoon, Saturdays; the other is to utilize these facilities the year-round by lengthening the academic calendar. These methods are not mutually exclusive either, and it is safe to say that both will be used increasingly in the years ahead.

The first of these — space utilization — has received considerable attention and there are several able studies available on the subject. ²⁷ Year-round operation, however, is a relatively new innovation and though the concept has aroused considerable interest and, indeed, controversy, there appears to have been little attempt to gather together available material, to review its contents, to identify problem areas, and to sort myth from fact. It is hoped

that this preliminary report will do something toward filling this omission and that it may form the basis for further research and implementation in this field.

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2. *Ibid*, Pt. 3, p. 6.
3. *Ibid*, Pt. 3, p. 10.
4. Bissell, C. T., "A Statistical Approach", in the National Conference of Canadian Universities, Bissell, C. T., (ed.) "Canada's Crisis in Higher Education", *Proceedings of the Conference, 1956*, Ottawa, November 12 - 14, 1956, University of Toronto Press, 1957, pp. 5-6.
5. Dominion Bureau of Statistics, *Fall Enrolment in Universities and Colleges 1961*, April 1962, p. 6.
6. Sheffield, E.F., and ApSimon, Claire M., *University Costs and Sources of Support*, Canadian Universities Foundation, Ottawa, 1962, pp. 8 and 12.
7. *Ibid*, pp. 14-15 and 28.
8. Hall, G.E., *The Reason Why*, printed text of an address to the Public Information Committee of the Western University Fund, 1963, November 5, 1962 [p. 3.]
9. See, D.B.S., *Fall Enrolment*, *op. cit.*, p. 6.
10. Sheffield, Edward F., *Enrolment in Canadian Universities and Colleges to 1970-71 (1961 projection)*, Canadian Universities Foundation, Ottawa, 1962, pp. 9-10. The pamphlet also gives an analysis of statistical methods used to arrive at the projected figures.
11. See, D.B.S., *Fall Enrolment* . . . , *op. cit.*, p. 6. This is in no way intended as a criticism of Dr. Sheffield's excellent statistical surveys, but is noted to point up the fact that enrolments are growing faster than the projected percentages for those attending college in the 18-24 age group.
12. Hall, G. E., *op. cit.*, p. 3.
13. Sheffield, E. F., *Enrolment in Canadian Universities* . . . *op. cit.*, p. 11.
14. At the 1956 'Crisis' conference during the course of a discussion on the paper "Who goes to University? English Canada", Dr. R. W. B. Jackson of the Ontario College of Education, co-author of the paper, believed that there was "a good possibility that within the next ten years 30 per cent or more of the university age group will be clamouring to get into Canadian universities." See, *Proceedings of the Conference, 1956*, *op. cit.*, p. 113.
15. Sheffield, E. F., "University Development: The Past Five Years and the Next Ten", in "Canada's Universities in a New Age", National Conference of Canadian Universities and Colleges, *Proceedings of the Conference, 1961*, Ottawa, November 13-15, 1961, p. 15.
16. *Ibid*, p. 5.
17. *Ibid*, p. 21.
18. Sheffield, E. F., and ApSimon, C. M., *op. cit.*, p. 26.

19. *Ibid*, p. 25.
20. See Dominion Bureau of Statistics, Education Division, *Student Progress Through the Schools, By Grade—1960*, September 1960, p. 40 *et seq.*, where it was estimated that of 100 students entering first year university, only 61 graduated with a first degree. These figures were reached by projecting the figures of one large university for the country as a whole, and thus may not be wholly accurate. Nonetheless, even allowing a margin for error the rate is still high.
21. "Two-thirds of the universities made changes in their admission requirements between 1958 and 1960, and most of these changes made it more difficult for applicants to qualify", Sheffield, E. F., "Admission to University—the Current Situation", paper presented to a meeting of the registrars of the Universities of Ontario and Quebec, at McMaster University, January 31, 1961, quoted in *University Affairs*, Canadian Universities Foundation (quarterly) Vol. 2, No. 3, February 1961, p. 3. See also, Sheffield, Edward F., and Sardinha Margaret, *Admission to University, 1962*, Canadian Universities Foundation, February 1963.
22. Scores on Aptitude and Achievement tests in Alberta show that 70-75% of the top quarter in Scholastic Aptitude do not enter the University of Alberta. Similar tests in Ontario show that 40-45% of the top quarter of highly-motivated Grade XIII students do not continue to university. See, Jackson, R. W. B., "Selection of University Students", paper presented to the National Conference of Canadian Universities, *Proceedings of the Conference, 1958*, pp. 31-40, espec. p. 38.
23. Weimer, Arthur M., "The Challenge of the Decade Ahead", paper presented to the Second National Assembly of the National Federation College and Universities Business Officers Associations, July 1960. Printed in *Proceedings of the Second National Assembly*, p. 22.
24. One U.S. researcher concludes that there is a rosy future ahead for the strong, private, liberal arts college. One problem, however, is that these institutions have taken few impecunious students in recent years and are likely to take an even smaller proportion in the future. See, Tickton, Sidney G., "A Look into the Crystal Ball", in *The Saturday Review*, Vol. XLV, No. 20, May 19, 1962, pp. 63-64.
25. National Conference of Canadian Universities and Colleges, *Proceedings of the Conference, 1961*, *op. cit.*, p. 24.
26. D.B.S. *Fall Enrolment*, *op. cit.*, p. 6.
27. One example is Russell, John D., and Doi, James I., *Manual for Studies of Space Utilization in Colleges and Universities*, American Association of Collegiate Registrars and Admissions Officers, Ohio University, 1957.

CHAPTER II

The Background Outlined

For the purposes of this study, an institution is considered to be operating the year-round when it offers a full schedule of *regular* daytime academic courses leading to a degree, over a period of not less than forty weeks in any calendar year. The forty or more weeks may be divided into three or more terms, which may or may not be equal in length, but in which the courses are of equal credit value.

To this writer's knowledge only one faculty at one Canadian institution of higher learning is operating on a year-round basis — the Department of Engineering at the University of Waterloo, which has initiated a co-operative, or work-study calendar system. Should Sir George Williams University of Montreal put into effect a daytime summer programme in addition to its regular evening courses, (as is presently being considered^{1*}), it would be running on a year-round 8 a.m. to 11 p.m. basis.

The majority of Canadian colleges and universities, however, operate on a two-term or semester system with a total of approximately 26-28 weeks of regular course instruction per year. Many also hold summer schools; these vary in length from 6-8 weeks with courses usually especially oriented to high school teachers, who are given an opportunity to further their own education by this means. Until recently it was generally not possible for a regular student to continue taking courses leading to his degree during the summer months. Now, however, a trend is apparent in which a number of regular students are attending summer schools for the purpose of accelerating their course, or making up some deficiency in their programme.

* References may be found at the end of the chapter, p. 19.

The University of Saskatchewan, for example, has recently instituted an Intersession period of six weeks prior to its regular summer school programme. The rapid growth in the popularity of this innovation — from 58 students in 3 classes in 1957, to 604 in 15 classes in 1961² — suggests that it is filling a definite need. It also puts a small part of that university onto year-round operation.

Some misconceptions reviewed

There are certain popular misconceptions regarding year-round operation of colleges that should be noted here. The first is, that as the faculty will have to teach year-round, the quality of teaching will suffer, research will lag, and much of the intellectual environment of the university will be lost — being replaced by a mass production, big-business-type atmosphere.

The misconception here is based on the supposition that the faculty will *have* to teach year-round. In all the schemes for year-round operation studied by this writer there were provisions *preventing* any faculty member from teaching continuously more than a specified number of terms.³ At the end of this period a compulsory leave on full pay takes effect, usually of 18-21 weeks in duration, which, with the regularly scheduled holiday periods during the academic year (6-10 weeks), enables faculty members to keep up with their research, writing, course revision, and so forth.

In addition, teaching the extra term is generally a voluntary proposition for the individual faculty member and one which can earn him a considerable increase in salary. The University of Pittsburgh listed three advantages for the faculty under their trimester system (three equal terms) of year-round operation:

- a) Faculty members who choose to teach in all three trimesters will have a substantial increase in annual earnings. Faculty members who choose not to teach in the third trimester will have more time available than under a two-semester system for research or other forms of professional development.
- b) There may be more flexibility in arrangement of leaves (as well as in the scheduling of research), a flexibility resulting from the increased size of departmental staffs which will be required under the trimester plan.
- c) The rotational possibilities of three equal trimesters will permit faculty to take advantage of other times off than summer for travel, research, or other service.⁴

As Sidney Tickton notes in his latest edition of *The Year-Round Campus Catches On*: "the colleges and universities involved desire to run the plant year-round — not the faculty."⁵

A second misconception, closely allied to the first, is that under year-round operation all students *must* attend all year. Of the thirty-eight institutions listed by Tickton as presently operating the year-round, none (except those on a work-study system) require year-round attendance from their students. Some encourage it, some discourage it; others require proven academic ability before allowing acceleration, still others leave it entirely to the student.⁶

The faculty committee which recommended year-round operation for the University of Michigan had this to say about student attendance:

The Commission see its mission as that of proposing a plan which would place the *University*, rather than the student, on full 12-month operation. Although courses can be offered in such a way as to encourage a fairly even enrollment around the year, this year-round operation should not depend upon year-round attendance by any individual student. Students should be given the maximum flexibility in entering upon their college program, in pursuing their educational goals within this program, and in graduating. Each student should proceed at the pace best suited to him, which, in the majority of cases, might approximate the present academic schedule. The program should be sufficiently flexible to permit the acceleration of exceptionally motivated, able and mature individuals, while providing for an even slower rate of progress than under the present system for those students for whom such a program would be desirable.⁷

Other misconceptions regarding year-round operation appear to have arisen through undue stress being placed by some on the "efficiency" and "cost-saving" characteristics of the concept. To some, this raises visions of huge "mills" controlled and administered by the industrial-type efficiency experts, spewing forth great masses of uninspired and uninspiring students all cast in the same mould. This picture quite naturally and rightly, is anathema to the university intellectual who prizes individual learning above all else. As we shall see below, it is also far from being the rationale for introducing a year-round calendar.

It is possible, too, that some of the adverse feeling that appears to exist may stem from the 'historical validity' concept imparted to the four-year degree programme through common usage. This follows the line of thought that as there are literally millions of graduates of four-year degree programmes, and these programmes have been offered for centuries by the universities, it must be correct that four academic years of study from junior matriculation is the time required for an undergraduate degree. Dr. Umbeck, president of Knox College, had some interesting words to say on this subject:

The origins of some time-honored practices in higher education do not tend to strengthen our confidence in these practices. Note, for example, the profound analysis and study which undergirds the widely accepted idea that a college education consists of four years of post-high-school study . . .

It happened like this. The main reason for the four year college course today is that Harvard adopted it in 1636 . . . Harvard adopted it because Cambridge and Oxford had it; they had it because Oxford, when started in the thirteenth century, adopted it. Oxford adopted it because English parents, who had been sending their sons to Paris informally, decided some years earlier that four years of university study — (though not for a degree — there were no course credits in these days) — would be a reasonable time to stay away from home. In this careful, studied, scientific fashion, we concluded that four years constitute a complete college education.⁸

Other subjective arguments that are sometimes put forward against the concept of year-round operation are:

The faculty would never accept it — yet, it was a committee of faculty that strongly urged the adoption of a year-round calendar at the University of Pittsburgh and of Michigan, though, at the latter, they admitted to having at first undertaken the study “reluctantly and with some scepticism.”⁹

The students would not accept it — yet, in the first year of year-round calendar operation at the University of Pittsburgh, more than 5,000 students, out of a regular student body of 13,000, attended the third trimester.¹⁰

It wouldn't work at ‘our’ college — yet, thirty-eight institutions of all sizes and types in the United States have already adopted year-round calendars and a further eighty-five are considering doing so. They range from less than 1,000 students, to well over 15,000, and include public and private colleges, liberal arts colleges, engineering colleges, teachers colleges, land grant colleges, state colleges and universities.¹¹

Why change the *status quo*? — notes one educationist, “Education of whatever kind is always for the service of life, and when the conditions of life change decisively, universities must adjust to meet them.”¹²

Proponents of year-round education are not suggesting that there should be less study for an undergraduate degree, but, that the amount of study that now takes four years in a regular two-semester calendar system, can be covered in a shorter period under a year-round calendar — should the student decide to accelerate. They point out, also, that without any acceleration of students, a year-round calendar system enables a college to accept at least one-third more students without any increase in its physical facilities.¹³

This is not to suggest that there are no problems involved in

introducing a year-round calendar. There are many, and later on in this study some of these will be examined in detail (see Chapter IV). There is, however, a growing body of factual information available on the subject and if, as its proponents suggest, the concept may be a partial answer to some of the problems besetting higher education in Canada then it merits an objective examination from all concerned.

The 'rationale' reviewed

The University of Pittsburgh, under Chancellor Litchfield, was the first major university in the United States to adopt a trimester calendar system — i.e., three terms — of year-round operation. Dr. Litchfield has written some articles explaining why the decision was made to place the University under the new calendar. He listed three academic reasons:

The first, was the problem of finding the time to encompass the enormous growth in knowledge that has taken place during the past half-century which has entailed adding year upon year to educational programmes. Year-round operation was a new approach to this problem — enabling more knowledge to be learned in a shorter time.

The second reason, "... is to bring the learning and maturative processes into closer correlation." Under the regular academic calendar the two processes have fallen increasingly out of phase. Humans reach physical maturity at the age of 20 to 21 and during the following ten years are at the height of their strength, energy, enthusiasm, and creativity. Yet students preparing for many important professions are unable to complete their formal education until they have reached their late twenties due to the length of the programmes. Under year-round operation this process could be speeded up, thus enabling society to benefit from earlier, longer-lasting contributions.

The third academic reason was to enable every student who wished to do so, to acquire both a liberal and professional education. Only with such training, Dr. Litchfield believes, can a student be fully prepared for life in today's complex society; and, for the preservation of that society, it is essential that the greatest possible number of its citizens acquire such an education. "But such a complete education requires time, so much time that many qualified students were unable or unwilling to undertake it under the old calendar. Under the trimester plan, however, both a liberal and

professional education often can be acquired within the time span formerly devoted to one or the other."¹⁴

In another article, Dr. Litchfield gives an additional and moral rationale for year-round operation: "In enabling a young man or woman to prepare for life in a shorter period of time, we direct his or her attention to other values — namely, employing one's capabilities to the maximum, probing the depths of one's resources, and accepting work as a necessary part of meaningful human existence. Above all else we believe our society needs a kind of education that fosters such tenets."¹⁵

The administrative advantages of the system Dr. Litchfield lists as the more efficient and wiser use of those resources that will be required to meet the growing pressure upon higher education in the next decade — principally, physical facilities, staff, and money. He goes into some detail regarding the implications for the U.S. of the considerable increase in student enrolment forecast for the years ahead. He believes that only through the widespread adoption of year-round operation will sufficient places be found for these students, and sufficient staff be available to teach them all at a saving of 4 billion dollars to the nation.¹⁶

The implications are more severe for Canada, where the impact of the increase in enrolments is greater; both in proportion to the numbers involved and the facilities available to meet them.

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2. University of Saskatchewan, *Annual Report for the Year Ended June, 1962*, pp. 2 and 53.
3. The University of Michigan, for example, will not allow any member of the faculty to teach more than five out of six consecutive terms. See, University of Pittsburgh, *Progress Report on Year 'Round Education*, Vol. III, No. 1, February 1962, p. 1.
4. University of Pittsburgh, *Background Information on the Trimester Plan of the University of Pittsburgh*, Dec. 1958, pp. 8-9.
5. Tickton, Sidney G., *The Year-Round Campus Catches On*, Fund for the Advancement of Education, N.Y., 1963, p. 9.
6. *Ibid*, *passim*.
7. The University of Michigan, *Report of the Commission on Year-Round Integrated Operation*, May 1961, p. 18.

8. Umbeck, Sharvy G., "The Challenge of the Decade Ahead", address to the National Federation College and University Business Officers Associations, in *Proceedings of the Second National Assembly*, July 6-8, 1960, p. 14.
9. University of Michigan, Letter of transmittal addressed to Prseident Hatcher, attached to *Report of the Commission . . .*, *op. cit.* pp. 3-4.
10. University of Pittsburgh, *Proceedings of the Trimester Conference, University of Pittsburgh*, June 15, 1960, p. 7.
11. Tickton, *op. cit.*, p. 6.
12. Corry, J. A., "The University in a Changing Society", address on the occasion of his installation as Principal of Queen's University, October, 1961, full text printed in the *Queen's Journal*, Vol. 89, No. 9, Friday, October 27, 1961, pp. 4-5.
13. In fact, as shall be seen in a later chapter, the most efficient calendar is one in which there are three even enrolments during the year, and in which no student accelerates. Under this system it would be possible using the same physical facilities, to increase the total student body by 71% and the number of graduates by 58%. See Chapter III.
14. Litchfield, E. H., "Trimester: Education of Superior Quality in a Shorter Length of Time", in *College and University Business*, Vol. 31, No. 1, July 1961, (pp. 24-27), p. 25.
15. Litchfield, E. H., "The Trimester System", Part I in "Colleges Can Operate All Year", in *The Saturday Review*, Vol. XLV, No. 50, December 15, 1962, p. 52.
16. Litchfield "Trimester: Education of Superior Quality . . .", *op. cit.*, pp. 25-26.

CHAPTER III

Some Year-Round Calendars Described

It is not intended to weigh the advantages or disadvantages of the calendar systems described here, but only to examine their methods of operation. The chapter is divided into two parts: Part I in which two theoretical studies are described that compare the operational efficiency of various year-round calendars; Part II in which actual operational calendars are reviewed.

Part I — The Theory

There are two studies known to this writer, that analyze the advantages and disadvantages of various types of year-round calendars.^{1,*} One written by Elmer C. Easton, Dean of the College of Engineering, Rutgers University, the other prepared by Nelson Associates, management consultants, at the request of the Board of Trustees of State University of New York. In the first, a set of operational indices and numerical values are developed and a number of mathematical formulae established, in order that various types of programmes may be compared in terms of operational efficiency. In the second study, operational indices are also developed and the various systems compared on a graphic representation basis.

The Easton study^{2.}

In developing his mathematical formulae, Dr. Easton expresses most of his factors in terms of P which represents the maximum number of students that can be accommodated by an institution at

* References may be found at the end of the chapter, p. 35.

any one time. He employs three "relative use factors". U_i , refers to the use of instructional facilities, U_r , to the use of research facilities; U_t to the effectiveness with which the teaching staff are utilized in instruction. Two other major indices are used; Plant Capacity Index (P_m) and Degree Cost Index (G_c). (G equals the number of graduates per year in terms of P). The larger the value of P_m , the larger the plant capacity must be in order to permit economical operation within a given schedule; it is also a measure of the minimum economic enrolment required. The lower the degree cost, the more efficient is the calendar. This index is obtained by dividing the total annual operating cost by the number of degrees granted in a year.

Numerical values are derived for class distribution (C) by basing attrition on national averages and expressing the remainder in terms of C (e.g., the entering freshman class $F = 0.330C$, the final senior class $S' = 0.205C$). The number of teachers required for each class (N) is also expressed in numerical values based on the number of sections (credit hours) taught. (e.g., $N_F = 0.0125C$, $N_{S'} = 0.0122C$).

For demonstration and analytical purposes the extent to which the physical plant is used for instruction and research is based upon certain arbitrary assumptions and is expressed as $R = 0.04P$. Another assumption is that faculty salaries are increased 30 per cent under a year-round calendar.

Using these indices as a basis, Dr. Easton analyses and compares various calendars in terms of numerical values which he expresses in the table shown opposite.

Programme S (Present Standard) Admit once a year, all entering classes same size. Time to reach B.S.; $3\frac{1}{2}$ years. Two 17-week terms per calendar year.

Programme A2 — Admit twice a year, all entering classes same size. Time to reach B.S.; $3\frac{1}{2}$ years. Three 16-week terms; students in class two terms, off one term.

Programme A3 — Admit three times a year. All entering classes same size. Time to reach B.S.; $3\frac{1}{2}$ years. Three 16-week terms. Students in class two terms, off one term.

Programme B1 — Admit once a year (freshmen, first term; masters third term; doctors, second term). Time to reach B.S.; $2\frac{1}{2}$ years. Three 16-week terms; all students attend year-round.

Programme B2 — Admit twice a year (freshmen, first and second terms; masters, first and third terms; doctors; second and third terms). All entering classes same size. Time to reach B.S.; $2\frac{1}{2}$ years. Three 16-week terms; all students attend year-round.

Programme B3 — Admit three times a year. All entering classes same size. Time to reach B.S.: $2\frac{3}{4}$ years. Three 16-week terms; all students attend year-round.

Programme C3 — Admit three times a year. All entering classes same size. Time to reach B.S.: $4\frac{3}{4}$ years. Three 16-week terms; undergraduates on cooperative schedule. Graduates in class two terms, off one term.

Programme A3¹ — Admit three times a year. First term admissions twice as large as those of other two terms. Time to reach B.S.: $3\frac{3}{4}$ years. Three 16-week terms; students in class two terms, off one term.

Programme Q1 — Admit once a year. All entering classes same size. Time to reach B.S.: $3\frac{3}{4}$ years. Four 11.5 week terms; students in class 3 terms, off 1 term.

Programme Q4 — Admit four times a year. All entering classes same size. Time to reach B.S.: $3\frac{3}{4}$ years. Four 11.5 week terms. Students in class three terms, off one term.

Programme CQ1 — Admit once a year (two equal starting sections). All entering classes same size. Time to reach B.S.: $4\frac{3}{4}$ years. Four 11.5-week terms; undergraduates on co-operative schedule. Graduates in class three terms, off one term.

Programme CQ4 — Admit four times a year (one section in each class). All entering sections same size. Time to reach B.S.: $4\frac{3}{4}$ years. Four 11.5-week terms; undergraduates on co-operative schedule. Graduates in class three terms, off one term.

Program	S	A2	A3	B1	B2	B3
G	0.206P	0.214P	0.322P	0.270P	0.286P	0.322P
Pm	108	206	206	82	155	206
Gc	0.682Ta	0.806Ta	0.539Ta	0.606Ta	0.585Ta	0.539Ta
Ui	0.730	0.639	0.946	0.794	0.842	0.946
Ur	0.830	0.770	0.923	0.945	0.860	0.923
Ut	0.661	0.615	0.923	0.774	0.820	0.923
Program	C3	A3 ¹	Q1	Q4	CQ1	CQ4
G	0.322P	0.283P	0.206P	0.286P	0.229P	0.286P
Pm	206	314	108	310	194	310
Gc	0.539Ta	0.612Ta	0.682Ta	0.605Ta	0.650Ta	0.605Ta
Ui	0.946	0.831	0.745	0.923	0.746	0.923
Ur	0.923	0.872	0.831	0.910	0.872	0.910
Ut	0.923	0.810	0.648	0.909	0.730	0.909

It is readily apparent from the table, that programmes A3, B3 and C3 have the same values throughout. Furthermore, that these values except in two indices, represent the most efficient use factors of any of the programmes. Under these calendars more graduates would be produced, at a lower cost per degree and with a greater use of instructional facilities and faculty resources.

These three programmes have two things in common: They are on a trimester, or three term system, and they have three enrolments of equal size per year. Provided that these two requirements are fulfilled it appears that it makes no difference from the viewpoint of efficiency how long it takes the student to reach his degree — provided that all students are on the same system — i.e., all accelerating, or all not accelerating.

Dr. Easton draws the following conclusions:

By adopting a year-round schedule such as Program A3 in place of Program S, the nation's colleges could

- (1) grant up to 56% more degrees per year,
- (2) make up to 30% more use of instructional facilities,
- (3) increase faculty salaries approximately 30%.

In order to gain these advantages it would be necessary to

- (1) give up some summer activities such as conferences, symposia and short courses,
- (2) reduce faculty vacations to four weeks,
- (3) in some cases, alter the traditional pattern of starting time and vacation period for students,
- (4) for maximum advantages, enforce uniform distribution of students among several entering classes per year.⁴

The Nelson study :⁵

Five measures are proposed for comparing the relative efficiency of one calendar with another:

1. *Student Academic Years:* One student academic year is equivalent to one year's academic work by one student.

2. *Yearly Enrolment:* The number of individual full-time students enrolled over the period of one academic year. (Yearly enrolments and student academic years are roughly equal — less attrition — under single admission calendars. Under multiple admission calendars, however, yearly enrolment will exceed student academic years produced).

3. *Number of Freshmen Admitted per Year:*

4. *Number of Graduates per Year:* This varies according to retention rates and the number of freshmen admitted.

5. *Cost:* Operating cost per student academic year, and capital cost per student place are both relevant measures.

Provided all other things are equal, the most efficient calendar is one which enables more student academic years to be completed, that has more yearly enrolments, a larger number of entering freshmen each year, more graduates per year, and the lowest operating and capital cost.

Three operating requirements are listed that increase the efficiency of a calendar to the extent that they can be met:

1. *Terms of equal length, character and status* — i.e., equal in length, course offerings, student activities, faculty salaries, tuition fees, and so forth.

2. *Equal admissions every term.*

3. *Maximum number of full-length terms* — i.e., if 15-week terms, three; if 11 or 12-week terms, four per year.

A model is constructed of a balanced calendar, using the following retention rates:

First year: $A_1 = F$, $A_2 = .84F$, $A_3 = .74F$;

Second year: $A_4 = .64F$, $A_5 = .58F$, $A_6 = .56F$;

Third year: $A_7 = .54F$, $A_8 = .52F$, $G(\text{graduates}) = .50F$.

Each of the three terms in the balanced calendar is assumed to be 15-weeks long with 1,000 freshmen admitted *each* term. Each student spends two consecutive terms on campus and the third term off. By the fifth year the pattern has reached equilibrium and repeats itself indefinitely, provided the college continues to admit 1,000 students each term. (The number 1,000 is arbitrarily chosen for example purposes).

By year five there are two groups of freshmen on campus *every* term; one of 1,000, one of 840. There are also two groups of sophomores, one of 740, one of 640; two groups of juniors, one of 580, one of 560; and two groups of seniors, one of 540, one of 520. Thus there are 5,420 students on campus every term.

This example of a balanced calendar is compared with a typical two-semester, single admissions calendar with the same retention rates and the same physical facilities. Under the balanced calendar maximum term enrolment was 5,420; by using the same retention rates it is found that under a single admission calendar, 1,895 students may be admitted at the beginning of each year. ($.74F + .58F + .54F = 5,420$; therefore, $2.86F = 5,420$; $F = 1,895$). In the fourth year when the pattern has reached equilibrium there will be a total of 5,420 students on campus during the first term, but, due to attrition, there will be only 4,851 students in the second term.

A glance at the chart on the following page will show the difference between the two systems when taken at equilibrium.⁶

Class	Balanced Calendar			Two-Semester Type Calendar	
	First term	Second term	Third term	First term	Second term
Freshman	1000*	840 1000*	840 1000*	1895*	1592
Sophomore	740*	640 740*	640 740	1403*	1213
Junior	580*	560 580*	560 580	1098*	1061
Senior	540*	520 540*	520 540	1024*	985
Term Enrolment	5420	5420	5420	5420	4851

Using the measures of efficiency defined earlier on, the following results are obtained:

	Balanced calendar	Two semester calendar
<i>Student Academic Years</i> (calculated by dividing total term enrolments by two)	8130	5135
<i>Yearly Enrolment</i> (the sum of figures marked with an asterisk *)	9280	5420
<i>Freshmen Admitted</i>	3000	1895
<i>Graduates</i> (varies according to retention rates — in this case equal to 50% of freshmen enrolled)	1500	948

It is obvious that the balanced type calendar of year-round operation is markedly more efficient than the standard two-semester calendar, or, for that matter, any other system. This may be seen in the following table:

Comparison of Calendar Systems ⁷

<i>Plan</i>	<i>Total Freshmen admitted</i>	<i>Graduates per year</i>	<i>Yearly Enrolment</i>	<i>Student Aca- demic Years</i>
S1	1748	874	5000	4738
S2	1846 (6%)	923 (5%)	5926 (18%)	5000 (6%)
T1 (acc)	2294 (31%)	1147 (31%)	5000 (—)	6482 (37%)
T2	1846 (6%)	923 (5%)	5280 (5%)	5002 (6%)
T3	2769 (58%)	1385 (58%)	8565 (71%)	7500 (58%)
Q4	2536 (45%)	1268 (45%)	8084 (61%)	6667 (41%)

(Figures in parenthesis show the percentage increase over S1)

<i>Key:</i>	<i>Plan</i>	<i>Type</i>	<i>Admissions per year</i>
	S1	Semester	One
	S2	Semester	Two equal
	T1 (acc)	Trimester	One — all students accelerate
	T2	Trimester	Two equal
	T3	Trimester	Three equal
	Q4	Quarter	Four equal

The balanced-type trimester calendar with three equal enrolments per year is obviously the most efficient with the balanced quarter system close behind, "... under the balanced trimester (T3) a college can accommodate 8,565 full-time students on a campus having a capacity of 5,000 students at any one time; can produce 7,500 student academic years within a twelve-month period; can admit 2,769 freshmen, more than 1,000 more than under the S1 plan; and can graduate 1,385 seniors compared to 874 under S1. The percentage gains are, respectively, 71%, 58%, 58%, and 58%." ⁸

Both the *Easton* and *Nelson* studies, then, reach the same conclusion: the most efficient calendar is one that divides the year into three parts with equal enrolments at the beginning of each term.

Part II — The Practice

The trimester calendar

The trimester calendar was put into operation at the University of Pittsburgh in September 1959, after a thorough study by a committee of faculty members. ⁹ It was decided that the calendar would be made up of three 15-week terms: the first commencing immediately after the Labour Day holiday at the beginning

of September and ending a few days before Christmas; the second, commencing early in January and ending at Easter; the third, commencing immediately after Easter and ending at the end of July. In this manner there is at least a one-week break between winter and spring terms and one month between spring and summer.

Each trimester term is the equivalent of a semester term under the old calendar system. The student is still required to complete eight terms of study for the undergraduate degree but can accelerate if he so wishes, thus completing the eight terms in $2\frac{3}{4}$ years.

The same amount of work is covered during each trimester as in the semester, thus there is no problem regarding transfers and credits from another university. Each trimester has seventy-seven days of instruction and six days for examinations, review or reading.¹⁰ Since the inception of the system at Pittsburgh, 4,500 to 5,500 students out of a total student body of approximately 13,000, have elected to attend the third trimester each year.

Summer session programs for special groups, such as public school teachers, are run concurrently with the summer term or trimester. Special arrangements have been made regarding the faculty. Faculty members on 12 month teaching-and-research appointments teach two trimesters and research the remainder of the year. Those on 12-month teaching appointments teach three trimesters with a one-month vacation and are paid for a full 12 months — i.e., $\frac{1}{3}$ more than under the two-semester calendar. Teaching a third trimester is voluntary, but no faculty member is allowed to teach year-round indefinitely. It has been found under the new system that there is more flexibility possible in the arrangement of leaves and scheduling of research.¹¹

The University acts as a clearinghouse for information on year-round operation and also is running a continuing study on student and faculty attitudes toward the system. The results of some of these studies are noted in Chapter IV and V of this report in which some problems connected with year-round operation are reviewed. The University has also established a committee to study the programme of cooperative education at other institutions in the U.S.; should it be considered to be of value academically, the University may adopt such a programme.¹²

The split-trimester

The University of Michigan, in instituting a year-round programme for full operation in 1964-65, adopted a split-trimester system for the third or summer term. The calendar recommended

by the study committee as representing the best compromise differs from the University of Pittsburgh in not having a one-month summer vacation:

First term. Begins last Monday in August, ends just before Christmas, allows 15½ weeks of classes and examinations in addition to a full Thanksgiving recess.

Christmas recess: Two weeks between first and second terms.

Second term. Begins in early January, ends in early May, allows a full 15½ weeks of course instruction and examinations in addition to a full week's recess midway in the term.

One-week break between second and third terms.

Third term. Begins in early May, ends in mid-August, with the 15½ weeks divided into two terms of 7½ weeks each with a ½ week break between.

One-week break between third and first term.¹³

The Commission noted certain advantages to the split third-term calendar:

1. It conforms well to the guiding principles outlined as desirable and necessary to preserve the academic resources of the University (see below p. 40).

2. It eliminates the 'lame-duck' session after Christmas, and allows both faculty and students on a conventional two-term basis a period of 4 full months in the summer for other pursuits.

3. With a more even distribution of vacation periods in and between terms it should be possible for students and faculty members who so wish, to work more of the year than is presently considered desirable.

4. By integrating summer term offerings with the regular course programme, course offerings should be improved, curricula be better planned, and the faculty have better employment conditions.

5. The split term plan allows the maximum flexibility for student participation. Students may accelerate by taking a half a term a year, and still have ten weeks vacation in the summer. They could graduate in three years by taking half a term for two years and attending the full summer term the third year.

6. It is expected that the first half of the summer term will be filled by regular students and the second half by teachers and other 'summer' students. It is believed that numbers in the two groups will be approximately the same.

7. The calendar plan will give faculty members considerable flexibility in when and for how long they are on-campus.

8. The plan will provide for maximum utilization of University

resources. With an enrolment of 24,000 on a regular two-semester basis, adoption of the year-round system will allow an increase of up to 10,000 students for 2 semesters each, without having more than 24,000 students on-campus at any one time.

9. The plan should prove economically feasible without any reduction in working conditions or economic status of the staff.

10. The Commission was satisfied that the plan could be introduced without unduly increasing the teaching loads on any of the departments.

11. With a third term of similar length as the other two, there can be a greater consistency of course structure throughout the year. Even those courses offered in their entirety in one-half of the third term can be similar to full-term offerings, but given at twice the speed.¹⁴

Florida State University went onto year-round operation, September 1962. The rationale for adoption of the system was similar to that of the University of Pittsburgh; it was made public by the office of the Board of Control of the State of Florida:

With the recognition of our cultural dependance upon the college educated segments of the population has come the imperative that students complete the initial phases of the professional preparation in time to assume their professional responsibilities at the age of their greatest strength and energy. The availability of full programs of instruction on a year-round basis will make it possible for society to obtain longer periods of service from its professionally educated manpower as well as to have that service available at an earlier time.

While there is an insistent demand for professionally trained manpower today, there is also a clear recognition that professional education must be thoroughly integrated with liberal education. Under year-round operation it is possible for both liberal and professional education often to be completed with the time traditionally devoted to one or the other.¹⁵

The Florida State calendar is similar to that suggested by the University of Michigan except that each term or trimester is 15 weeks in length — 14 weeks of instruction with one week for examinations, with the summer term divided into two halves. There is, however, a difference in that class periods run for 55 minutes on Monday, Wednesday and Friday, and 85 minutes on Tuesday and Thursdays, there are no Saturday classes. In the summer, full courses will be given over the entire trimester and at double speed in each of the two halves. The double-speed courses will be given in 65 minute periods, five days a week.¹⁶

The quarter system

As its name implies, the quarter system of year-round opera-

tion is one in which the calendar is divided into four approximately equal parts. Though both the trimester and quarter systems have their own strong advocates the difference between them is essentially a matter of mechanics.

Pennsylvania State University was placed onto a four quarter calendar system in 1961-62. The academic year was divided into four ten-week terms. Class periods were increased from fifty minutes under the old two-semester system, to seventy-five minutes under the new calendar. Thus each 10-week term provides the same number of minutes for instruction as the former 15-week, fifty minute system.

All four terms are equivalent in every respect, and students may accelerate by attending the fourth term, if they wish. Students enrol in three or four major courses — less than the previous system, but they are still occupied approximately the same number of hours as under the old calendar. Course load for the faculty is reduced, though time spent in class and student contact hours remain the same.

The principal reasons given by Pennsylvania for the change were: 1. To provide a more flexible programme of studies, and one more adaptable to a rapidly growing number of students. 2. To increase the utilization of the University resources. 3. To make the maximum contribution to the need of the state in all fields of higher education.¹⁷

The 3-3 plan

The three-term, three-course programme, as presently operated by various institutions in the United States (*Dartmouth, Carleton et al*) is not technically a year-round programme under the definition adopted for this report as the length of the academic 'year' is less than forty weeks. It is included here because of its educational interest and the fact that it is readily adaptable to a year-round calendar simply by increasing the length of the terms, or adding a term (in which case it would, of course, become a 4-3 plan.)

The major rationale behind the plan is to place more responsibility on the student for educating himself. Donald H. Morrison, Provost of Dartmouth College, notes:

In most colleges, the emphasis is on the student's *learning what he is taught*. This expectation requires no rude break in habits begun in elementary grades and strengthened in secondary school. It fits in well with textbooks, weekly classes and quizzes, hour and final course examinations, required attendance, and other established routines.

But does this approach produce the best motivation for self-education, which must extend beyond (but not begin with) Commencement? Does it accelerate or retard intellectual maturity in college students? Does it require of the teacher busy work that is educationally unproductive, at the sacrifice of more rewarding activities?

Suppose the focus is shifted from teaching to learning, and colleges begin to think of their task as one of *enabling students to learn without being taught*. If, as most of us believe, the only education worthy of the name is self-education, this concept of teaching is imperative.¹⁸

The Committee on Educational Policy established at Dartmouth to discover the best means of putting this philosophy into practice, recommended the three-term, three-course calendar "as the most satisfactory way of reducing the subdivision of student attention implicit in five simultaneous courses without incurring the drastic reduction in the number of electives implicit in a change to a four-course semester program."¹⁹

Combined with the three courses meeting four times a week each, is a programme of independent reading — general reading in the first two years, more specialized reading in the senior years — with the student selecting his own choice from a widely varied list prepared by faculty. The Committee hoped this programme would have sound education value: "While the resolution with which some students oppose the machinery of education must not be underestimated, it is reasonable to expect that a significant and useful fraction — one dares to hope a large majority — of the student body of a less intransigent disposition would benefit."²⁰

Interdepartmental courses are available in the Social Sciences on an elective basis. Three courses in the Humanities are compulsory, two of these being required in the form of a "sequential" or "double" course. Four courses are required in the Sciences — within at least two of the areas of Mathematics, Astronomy, Chemistry, Physics, Botany, Geology, Zoology — two of which courses must be sequential. One foreign language is required with a proficiency level equivalent to three terms of study at the college level. In addition, throughout the senior year an extra course meeting twice weekly and known as the Great Issues course, is compulsory; as is an obligation to write a journal covering the lectures.

The 3-3 plan was put into operation at Dartmouth in 1958-59. A letter from an administrative officer of the University written in March 1960 though noting that the writer did not wish to make more than an "impressionistic assessment", due to the fact the system had only been in operation for one and a half years and he

had been on the committee that recommended its adoption, had this to say:

Every evidence we have indicates a sharp quickening of the intellectual tone of this campus. The evidence comes by word of mouth from faculty and students alike and is consequently subjective. There are, however, other bits of evidence that can be more easily measured. Last year, which was our first year of the new curriculum, the circulation of books in the library increased 23% over the preceding year. So far this year the circulation has increased 17% over the same period last year, which means that although students are taking only three courses at a time rather than five, there has been a 40% increase in the circulation of books in the library. The bookstore reports about a 50% increase in the sale of non-required books. . . .

There seems to be no question that the students are working harder than they ever have before, but the students who have been under both plans say that three courses at one time give them a much richer and more stimulating intellectual experience.²¹

The co-operative system

The cooperative or work-study system of education has been in operation in the engineering faculty at the University of Waterloo since 1959. This is the first Canadian university or college to adopt the programme though it has been in use since 1906 in the United States, where there are approximately 70 institutions that offer work-study programmes — at least in some of their faculties. Co-operative schemes can be found in Engineering, Science, Business, Graduate Studies and Liberal Arts. Usually, they consist of two semesters of study followed by a job found by the college, in the profession to which the student aspires. Only recently, however, have cooperative schools themselves, gone onto year-round operation, though, of course, their students have been under a year-round scheme for many years.

Kalamazoo, for example, a private, co-educational, liberal arts college, has this year (1962-63) adopted a 4-3 system — four quarters of eleven weeks each, with students taking only three courses. The four-quarter pattern provides two tracks, one for students taking the degree in the usual four years, and one for students taking it in three.

The four year track pattern requires ten terms on-campus and two or more credit-earning terms off-campus, at least one of which must be spent studying abroad. During their first and second years, four-year students spend three terms in residence and are encouraged to spend the fourth quarter in cooperative education — i.e., a job, provided by the college placement service, "in which they can test their vocational aspirations and learn the relevance of their studies to their ultimate professions."²²

The third year consists of as much as two terms of study abroad and two in residence; the senior year, two terms in residence and one in off-campus study. To keep the numbers in balance some seniors take their off-campus terms in the fall and some in the winter quarter. All, however, graduate in June.

FOUR-YEAR PLAN ²³

	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>	<i>Summer</i>
First Year	IR	IR	IR	V CE
Second Year	IR	IR	V CE	IR
Third Year	V SA	SA	IR	IR
Fourth Year	IR OCS	OCS IR	IR	

Key: IR — in residence
V — vacation
SA — study abroad
OCS — off-campus study
CE — cooperative education

Students with advanced placement, equivalent to three or more college-level courses, can earn a degree in three years if they wish to do so. Students on the three-year track enrol in the summer of their first year and are on-campus during the fall quarter of the third year, otherwise they are in-step with the four-year track.

THREE-YEAR PLAN ²⁴

	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>	<i>Summer</i>
First Year				IR
Second Year	IR	IR	CE	IR
Third Year	IR	SA	IR	IR
Fourth Year	IR OCS	OCS IR	IR	

The calendar provides a 15-day break between fall and winter term (at Christmas), a one-week break between winter and spring terms, a three-week break between spring and summer quarters, and one week between summer and fall. Each faculty member

teaches only two courses per term, with an average load of 48 students, and may exercise his discretion as to how often he meets his students — with the provision that he pre-empt one-third of their study time and helps them learn as much as they can.

The advantages claimed for the co-operative system in the United States were listed in the *Report on Cooperative Education*, prepared by the Fund for the Advancement of Education and published by the Thomas Alva Edison Foundation. They were summarized by Dr. D. T. Wright of the University of Waterloo, as follows:

- 1) students on co-operative programmes find greater meaning in their studies,
- 2) co-ordination of work and study increases student motivation and purpose,
- 3) co-operative experience helps students become mature and independent,
- 4) students develop greater skills in human relations and there is a tendency "to break down the segregation of college students into a wholly adolescent community",
- 5) students are helped to orientate to the world of work and to test their aptitudes,
- 6) some able students are encouraged to pursue higher education who would not otherwise have done so or have been able to do so,
- 7) academic institutions benefit from the close liaison with business and industry that is concomitant with a co-operative programme,
- 8) co-operative programmes permit fuller use of university capital facilities,
- 9) co-operating industries and other organizations prefer to have training and orientation programmes completed before graduation and have a better view of young graduates as prospective employees.¹⁵

Other systems

There are other calendar systems of year-round operation apart from those reviewed here. These however, are generally based on the two-term plus summer programme plan which is simply a lengthening of the regular system. Generally, also, the summer term is shorter than the other terms and consequently special arrangements — i.e., a speed-up or restructuring — have to be made so that the courses offered in this term have the same credit value as those of the regular terms.

References

1. A third theoretical study is Hengstie, Thad L., McGrath, Earl J., *A New Trimester Three-Year Degree Program*, Institute of Higher Education, Columbia University, N.Y., 1963. This, however, is a proposal for the adoption of a 14-week trimester system rather than a co-operative study. It gives a relatively detailed examination of cost structures under a trimester system.

2. Easton, Elmer C., *Year-Round Operation of Colleges*, Rutgers University, College of Engineering, Research Bulletin No. 41, 1958. It is impossible to do justice to the original study in this limited survey and the interested reader is referred to the original.
3. Reproduced by courtesy of Dr. Easton, *op. cit.*, p. 31.
4. *Ibid.*, p. 36.
5. Nelson Associates, *Increasing College Capacity by Calendar Revision*, a report to the State University of New York, State University of New York Institutional Research Study, 1961. As in reference 2, above, the interested reader is referred to the original study.
6. Reproduced by courtesy of Nelson Associates, *op. cit.*, p. 27.
7. Derived from *op. cit.*, Table D, p. 29.
8. *Ibid.*, p. 28.
9. See, University of Pittsburgh, *Report of Committee on a Trimester Calendar*, April 1958.
10. This compares well with the 160-165 days of instruction that appears to be about average for Canadian universities and colleges.
11. See, University of Pittsburgh, *Background Information on The Trimester Plan of the University of Pittsburgh*, December 1958, pp. 7, 8 and 11.
12. University of Pittsburgh, *Progress Report on Year 'Round Education*, Vol. III, No. 1, February 1962, p. 1.
13. University of Michigan, *Report Commission on Year-Round Integrated Operation*, May 1961, p. 79.
14. *Ibid.*, pp. 57-62.
15. State of Florida, Office of the Board of Control, *Year-Round Operation of the State University System*, Tallahassee, October 1961, pp. 2-3.
16. Florida State University, News Bureau, press release dated May 11, 1962, p. 1.
17. University of Pittsburgh, *Progress Report ... op. cit.*, Vol. 1, No. 2, 1960, pp. 1-2.
18. Morrison, Donald H., "From Dependence Upon Teaching to Independence in Learning", *Dartmouth University Alumni Magazine*, April 1957, [photocopy, p. 2].
19. Dartmouth University, Committee on Educational Policy, "A New Educational Program", in *Dartmouth Alumni Magazine*, *op. cit.*, [p. 4].
20. *Ibid.*, [pp. 4-5].
21. From photocopy of original letter.
22. Kalamazoo University, *Interim Report on the Kalamazoo Plan for the Twelve-Month College*, March 1961, p. 1. For further information on work-study programmes, see, Tyler, Dr. R.W., and Mills Annice L., *Report on Cooperative Education*, Thomas Alva Edison Foundation, 32 pp; this is a summary of a national study; also Wandmacher, Cornelius, *Educational Administration in Work-Study College Programs*, paper presented at the Princeton Conference on Cooperative Education, June 28-29, 1961, published by Thomas Alva Edison Foundation, 14 pp.
23. Kalamazoo, *op. cit.*, p. 2.
24. *Ibid.*, p. 2.
25. Wright, D.T., *The First Five Years of the Cooperative Engineering Programme at the University of Waterloo*, mimeographed text of an address to the Engineering Institute of Canada, Annual General Meeting, Montreal, June 12-15, 1962, p. 5.

CHAPTER IV

Some Problems Reviewed

In this chapter an attempt will be made to outline and review some of the problem areas that may be associated with the initiation and operation of a year-round calendar. Briefly, these may be listed under such headings as: Faculty acceptance, procurement of additional faculty, student acceptance, faculty and/or student exhaustion, student maturation, faculty salaries, student fees, operating fees, operating costs, additional scholarship and loan funds, changeover costs, equal enrolments, summer schools, articulation with secondary schools, athletic programmes, conventions, course scheduling, curriculum revision, registration procedure, plant maintenance. Though this may not be a complete listing it does cover the major areas of concern.

Faculty acceptance

The very simplicity of the concept of year-round operation tends to make its proponents overlook some of the problems that may be associated with its initiation. One of these is the effect it may have on those long-used to a particular way of life. As one study notes: "A major calendar change affects a great number of people and entails a great deal of work and trouble to effect. It should not be undertaken lightly and should merit very careful consideration by all concerned. Such a change should be undertaken only for strong educational reasons and when it has the enthusiastic support of the faculty".¹

Though this last phrase may be considered axiomatic, it is of particular concern in this context because of the attitude, noted briefly in a previous chapter (see p. 15), that a change to year-round operation will drastically affect the lives of faculty and

¹ References may be found at the end of the chapter, p. 33.

generally for the worse — through increased teaching loads, reduction of time for research, and the changing of the university environment to that resembling a big business organization. It was noted that this attitude may be partly based on a misconception regarding the actual operation of a year-round calendar and the rationale behind its initiation. The 'right or wrong', however, does not concern us here — only an acknowledgement that the attitude does in fact exist.

The head of the Department of Education at the University of New Brunswick, asked by the president of the university to undertake a study into the problems of increasing the academic year to three terms, had this to say:

Canadian university faculties enjoy rather extreme autonomy; they are, moreover, extremely conservative in educational matters, a condition which explains, to some degree, the lack of experimentation evident in this country ... Already many universities have regulations preventing students from obtaining first degrees in less than four years ... Whether this is right or wrong is not argued here; the point is that this attitude would have to be broken down before any "speed up" in the undergraduate programme would be possible. There are many in the relatively sheltered academic environment who are not aware of the changing world.²

In fairness to the Canadian academic world it should be noted that this attitude is by no means restricted to this country. One U.S. observer believes that it stems from the lack of interrelation between the different 'images' of higher education that have developed over recent years. He notes three of these images. The *numbers* image tied to the public demand for enlarging the capacities of universities and colleges. The *efficiency* image centred on the demand on administrators to economically and fully utilize available facilities. The *quality* image associated with the demand that the faculty improve the quality of instruction.

With the disparity among the number, efficiency and quality images of higher education, there are suspicions and counter-suspicions about the motives for year-round calendar planning. The public is suspicious of the administration in higher education because of its failure to develop a full-time, efficiency operation and suspicious of the faculty because of its affluent, part-time reputation. In the same cycle, the administration is critical of the public because of its interest in enlarged service without adequate financial support and doubtful about the motives of the faculty because it wants to protect the *status quo* under the guise of faculty freedom. Of course, the faculty is wary of the public because of the desire of the latter to dilute the quality of higher education with numbers, and wary of the administration because it wants to reduce the position of the faculty member to that of an employee. As the consequence, the academic calendar and year-round operation become subjects in raging controversies among protective interests.³

The question naturally arises, then, whether any attempt to introduce year-round operation into Canadian institutions is bound to fail — dashed on the rocks of controversy. There can, of course, be no certain answer to that question at this time. The fact, however, that committees have been set up at several institutions to study the question of greater utilization of facilities, shows that there is an awareness of the problem. Generally, awareness of the need for change is one sign that change will indeed occur.

The Dean of one Canadian faculty notes: "There is indication . . . that universities in general are preparing to take a more radical view of their position in society. Certainly we have come to a point where heterogeneity in pattern and form is more valuable than dreary uniformity."⁴

The speed with which change comes to any particular institution is likely to increase in proportion to the mounting pressure for enrolment. We have already noted, for example, that Sir George Williams University in Montreal is considering adding a day programme in the summer. This is due to the enrolment pressure on the summer evening division — up 14.1% in 1961 over 1960.⁵ Similarly, with the Intersession period at the University of Saskatchewan — with attendance up to 604 from 58 in five years.⁶

Though none of the faculty committees established in Canadian universities to review the problem of greater utilization of facilities have yet recommended year-round operation, nor have they condemned the matter out of hand. Judging by the experience in the U.S., other, similarly-constituted committees — established in a year or two when enrolment pressures will have grown — may well decide on year-round operation.

The situation at the University of Manitoba, for example, is not unlike one that existed at the University of Michigan in 1957 when the first study committee on the university calendar was established. Though not making a specific recommendation for year-round operation at that time, the committee recommended continued and accelerated discussion of the general problem of admissions and the establishment of another committee in 1961 to review the situation at that time.⁷ This second committee advised the adoption of a year-round calendar, which is now being put into effect.⁸

The committee established at the University of Manitoba though at present rejecting the idea of year-round operation for the University as a whole, (for reasons which will be reviewed later, see below p. 61) is continuing its study, looking into the possibility of lengthening the academic year and of introducing a trimester

plan into one of the professional schools that has expressed some interest in it.⁹

It is apparent, then, that the winds of change are blowing throughout the spectrum of higher education in Canada; it is most unlikely that faculty members, conservative though they may be, will deliberately obstruct such change, provided that it can reasonably be shown to be of benefit to the community in general.¹⁰ One Canadian educationist noted some years ago that it is a question of finding the proper balance: "Those who are engaged in higher education must always be balancing the traditional against the new. To adhere stubbornly to the traditional leads to decadence and futility. To seize too readily upon the new leads to confusion and loss of perspective. Our problem will always be to find the proper balance. This is particularly true of the admission problems which confront our universities."¹¹

Like anyone else, faculty members require time to examine a new idea and to adjust themselves to it — and even then there are bound to be varying reactions. This was noted by the Committee on a Trimester Calendar at the University of Pittsburgh:

The progressive changes in the opinions of the faculty and the student body from the first discussions of the proposal [1957] until the present [1960] have been carefully watched by the Committee. Of course there are always a number of faculty members who oppose new ideas without giving them a hearing. The reactions of these people were predictable. Others had a "wait and see" outlook and, as the planning progressed, they were soon persuaded of the merits of the plan. Still others accepted the idea enthusiastically from the first. It is apparent that the faculty must be given time to absorb the idea and to adapt themselves to it if their wholehearted support is to be obtained, as it must be if any plan is to succeed.¹²

It was noted previously (p. 17) that though the Commission on Year-Round Integrated Operation at the University of Michigan (made up entirely of faculty members), initially undertook its task "reluctantly and with some scepticism", it ended by unanimously recommending adoption of a year-round calendar. To guide them in their research the Commission established certain "guiding principles" under the headings of: safeguarding the quality of the university, avoidance of unnecessary change, maintaining adequate breaks in the education programme, obtaining maximum flexibility for students and staff, maintenance and strengthening of summer offerings, planning for educational as well as financial benefits.¹³

These broad headings encompassed all the problem areas of year-round operation. The Commission examined each problem thoroughly, discarding some as unimportant, making recommendations as to how to overcome or avoid others; in each case carefully

noting the reasons for their decision. On the subject of teaching loads, for example, they had this to say:

Twelve-month operation could very well add to the attractiveness of the university by providing greater flexibility in timing in the various activities of the individual faculty members. For these reasons the Commission believes that any new plan should still call for the equivalent of two semesters of teaching per year with additional service optional subject to limitations established to prevent continual year-round teaching year after year. Furthermore, the proportion of time available to the faculty member during his teaching term should not be encroached upon by the new plan.¹⁴

The entire report is in itself an answer to those who believe that faculty members are essentially reactionary and though upholding the value of research, only do so provided it does not directly affect their own lives.¹⁵ It is also an answer to those faculty members who without having studied the problems involved, condemn out of hand any idea of year-round operation.

It appears, then, that the problem of faculty acceptance rests in large measure upon the manner in which a concept is presented and a reasonable time being allowed for a thorough discussion of the subject. There appears to be no reason to presuppose that under these circumstances one measure will not receive as fair a treatment as the next.

The procurement of additional faculty

Some people believe that the procurement of staff rather than the increase in enrolments, is the major problem facing universities today. University teachers, they point out, are already in short supply — a situation that will be aggravated as enrolments grow. It will be difficult enough to recruit sufficient teachers under a regular programme of study and even more difficult to fill the extra requirements that would be created by year-round operation.

One difficulty regarding this question noted by Dr. Sheffield in his report to the 1961 National Conference of Canadian Universities and Colleges, is that no one really knows how many full-time teaching and research personnel there are at present in the nation's universities and colleges. This is due to the fact that the definition of these positions has not yet been sufficiently refined for statistical purposes. He estimated, however, that there were probably about 9,000 faculty members in 1960-61 and to maintain the same student-faculty ratio, some 25,000 would be required by 1970-71. Should the withdrawal rate of 5% be maintained, this would mean that approximately 23,000 new staff members would have to be recruited in the ten years 1961-1971.¹⁶ Though these projections may be high,¹⁷ there is no doubt that a very large number of new people will have to be found.

The number of additional teachers that would be required by any one institution should it go into year-round operation depends among other factors — such as student-teacher ratio, curriculum offerings, etc. — upon the number of students who attend the third term. When the number is equal to the enrolment in the first and second term, approximately 50% more teaching hours would be required. This, of course, does not mean that 50% more staff would have to be found. The amount would depend upon the number of regular teachers electing to teach an extra term. At the University of Pittsburgh, for example, of 388 faculty members on 9 months' appointments, 261 were reported willing to teach an extra term in any given year.¹⁸

*It is doubtful that a larger number of faculty would be required under year-round operation than under any other plan for coping with an increase in enrolments. In fact, the University of Pittsburgh believes the opposite to be true. At the first Conference on the Trimester system, it was noted that the estimated increase in staff requirements would be impossible to fulfill under present conditions: "Two inferences seem inescapable. One is that better use must be made of existing faculty resources. The other is that larger numbers of qualified people must be attracted to the teaching profession. The year-round calendar can make a constructive contribution in both of these directions. If adopted, generally, it would reduce by 20% the number of teachers needed in our colleges and universities and it would provide them with a higher yearly income than they now enjoy . . ."*¹⁹

The two measures — attract more people to university teaching, make better use of existing faculty resources — appear to be the only way to attack the problem. The former is undoubtedly being aided by the steady increase in faculty salaries. The overall average salary of full-time academic staff (excluding Deans) in Canadian colleges and universities in 1962-63 stands at \$8,640²⁰ — compared to \$5,430 in 1955-56. This is more competitive with salaries offered by business and industry, and should do much to attract new people to the field and retain those already there. (This process, it should be noted, would be further increased under year-round operation. A one-third increase in salary would bring the average up to \$11,520).

Another hopeful sign, is the increase in facilities for graduate studies in Canadian universities, and the increasing use being made of these facilities. Notes Dr. Leddy of the University of Saskatchewan, "There has . . . been a marked rise in the number of students entering post graduate courses, with the ultimate intention

of teaching at the university level, and if continued and effective encouragement can be given to such students during the next few years, it is possible that the supply of university teachers will in due course come closer to the urgent needs."²¹

The Executive and Professional Section of the National Employment Service is even more hopeful. Noting that some 20,000 new teachers will be required in the universities over the next eight years, they said: "Indications are that this demand will be met since endowments in graduate courses are increasing more rapidly than those in undergraduate courses. We can therefore expect a substantial increase in the number of graduates at the Master and Doctorate level during the next few years."²²

The figures appear to substantiate this optimism, at least to some extent. In 1956-57, 1,792 higher degrees were granted by Canadian universities; this had increased to 2,954 by 1960-61.²³ Though the figures for the number of degrees granted in 1961-62 are not yet available it is probable that this trend is rapidly accelerating for in 1961-62 there were 7,347 full-time graduate students enrolled in Canadian universities.²⁴

Better use of existing faculty resources

The question of better utilization of existing teaching resources has been widely studied in recent years. The Fund for the Advancement of Education has backed widespread experimentation in the U.S., in this field, and in 1959 issued a report on its findings. Due to its bearing on the present question it is worthwhile to extract a relatively lengthy quote from the highlights of these findings:

1. Many more students are capable of doing a large amount of work independently of classroom instruction than have been given the opportunity to develop their capacities for independent work, and the quality of their work will be as good or better than under present methods of instruction.
2. Students need to be carefully prepared for independent study to benefit most from it, but with such preparation average and slow students can do well.
3. The quality of the teacher has far more effect on student learning than the methods of teaching used or the size of the class taught. Consequently the best teachers should be made available to more students, and one of the best ways of doing this is to provide for large classes taught directly or over television.
4. Students learn as much in large classes as in small ones, and the loss of personal contact sometimes noted can be overcome by judicious use of class groups of widely varying size, both larger and smaller than customary, and by greater use of capable assistants.
5. Inertia of faculty and administration is largely responsible for

the slow pace of desirable educational change. When faculty members earnestly seek means of improving instruction for more students, many new methods less wasteful of faculty time can be effectively used. Much more and more far reaching experimentation is needed.

6. Colleges have made far too little use of modern technology to overcome faculty shortages.
7. There are teaching resources in many communities which could be tapped for part-time teachers if colleges would change their attitudes toward such staff members and properly induct them into their professional duties.¹⁵

More independent study for students, larger classes for the better teachers, greater use of teaching aids — such as closed circuit television, language laboratories, teaching machines — and a greater use of part-time teachers. These are all avenues which experiments have shown to be effective when correctly used. Notes one report: "Overuse or improper use of these media of communication may mechanize the educative process unduly, but wisely used they are invaluable tools in most fields of college teaching, conserving the time of faculties and students without reducing the quality of learning."¹⁶

Steps are being taken in Canadian universities to make more use of teaching aids. The use of language laboratories is, for example, growing, while McGill has an experimental TV system already in operation,¹⁷ and there were recent reports that Ontario's universities have sent plans to the provincial government for serious consideration of an educational television system should steps taken to increase university staffs not prove fruitful.¹⁸

One obvious method of increasing faculty utilization is to increase the size of classes. This idea usually receives an adverse reaction from faculty members, but the fact remains that a considerable difference in class size within the same institution and between institutions *already exists*. Notes the report from the Fund for the Advancement of Education, referred to above: "Curiously, class size is extremely flexible in practice, but the attitudes of faculty toward any change from what has been regarded as traditional are highly inflexible."¹⁹ Yet, experiments and experience with large and small classes shows that class size *per se*, has little effect upon the learning process — the major factor being the skill of the lecturer. The National Education Association of the United States feels that "the prevailing assumption that a class of 20 to 30 students is desirable for all subjects under all circumstances ignores the fact that a balanced pattern of smaller groups and much larger lecture groups may lead to better learning"²⁰, while the 1950 edition of the Encyclopedia of Educational Research notes: "... the

general trend of the evidence places the burden of proof squarely upon the proponents of small classes." ³²

An increased use of graduate students as assistants would also help overcome the faculty shortage problem. Experiments undertaken by the Fund showed that these assistants may require some training particularly in the social sciences, but that under proper supervision graduate students are as effective as full-time staff in teaching laboratory and discussion sections. ³³

Curriculum revision is another area through which it should be possible to make more effective use of existing and future staff. This subject is treated separately below.

It appears, then, that much can be done in the field of greater utilization of faculty resources and that there are grounds to believe that the shortage of faculty may be overcome through the further adoption of teaching aids and the increased number of graduates entering the profession. It is evident that year-round operation, in itself, will do nothing to worsen the situation, but, in fact, should actively aid the greater utilization of existing faculty.

Curriculum revision

The introduction of a year-round calendar would almost certainly entail a revision and restructuring of the curriculum. Many courses in Canadian universities are 'year' courses — i.e., they are given over the period of one academic year, usually with one major examination at the conclusion of this period. Under year-round operation these would have to be restructured in order to fit in with the length of the terms.

This would be a major undertaking (though of 81 departments at the University of Pittsburgh, only 5 reported any anticipated difficulty ³⁴) but, according to some Canadian educationists, curriculum revision may be a necessity if our institutions are to handle the growth in enrolments. Dean Fieldhouse of McGill notes:

[I should say that in some of our larger universities, between the end of the period when we had to cope with the influx of "veterans" and the beginning of our present "bulge", our enrolment fell by about 40% while our staffs increased by about 50%, but this gain was offset by an increase in the curriculum "offerings" of about 22%. Our present ratio of staff to students — if we consider merely total numbers — is quite remarkably satisfactory. The trouble lies in the matter of distribution. We constantly hear of the unhealthy condition of large classes and the catastrophe which faces us if they grow larger; but this is almost wholly a feature of introductory (and, often, compulsory) classes, and of "service course" given for professional schools. I repeat, therefore, that if we let the "wave" break on our present ill-considered curricular

structures, it may well be unmanageable, and that its imminence points the way to curriculum reform.²⁴

The growing profusion in undergraduate curricula offerings is causing widespread concern, particularly in the U.S. Notes one report: "The fact of increasingly specialized curricula serves as a cause in encouraging the growth of further specialization. Specialists who go into university or college teaching are anxious to add their particular graduate interest to the growing list of elective courses. The resultant proliferation of electives makes it difficult for the modern undergraduate to get the basic instruction he needs for graduate study, research, or other learned professions."²⁵

Inter-departmental rivalry, and competition among colleges to offer the 'most' of everything, are other causes of curricular profusion. (For example, the Ithaca College report quoted above, notes that some colleges of less than 1,500 students offer as many as 40 separate courses in biology!²⁶) By revision of the curriculum much can be done to use the faculty more effectively. Under the new Ithaca plan, for instance, a series of interlocking, inter-departmental plans have been established, along with a series of planned curriculum offerings. The result — a 6.5% saving in the Arts and Science faculty; a saving that will increase to 13%, once buildings specifically designed for the new curricula, come into operation — this will allow a substantial increase in salaries.²⁷

Other plans for reducing curricula offerings, allowing more independent study on the part of students and establishing inter-departmental courses, have been widely considered.²⁸ It appears, then, that the necessity of revising the curriculum under a year-round calendar, would not in itself, be harmful.

Under year-round operation, decisions will have to be made on the number of courses per year the student should take, the length of a class 'hour', the number of hours per week, and other operating data. In addition, a decision will have to be made as to whether the curriculum should be set up in such a manner that it will or will not help a student to accelerate should he so wish.

Student acceptance

The problem of student acceptance of a year-round calendar does not appear to be formidable if one may judge from the studies carried out by the University of Pittsburgh.

One study-questionnaire sent to the first 71 graduates under an accelerated year-round programme was returned by 50 of the students. Asked to express their attitude toward attending college

eleven months out of the year, 26% were "strongly favourable", 42% "moderately favourable", 8% "neutral", 18% "moderately unfavourable", 4% "strongly unfavourable", 2% did not reply.⁴⁰ The theory that the possibility of acceleration under a year-round calendar would be particularly attractive to the pre-professional, career oriented student, was also borne out in this small sample: 62% of the students had already applied to graduate schools, while a further 8% believed that the trimester calendar had greatly influenced the probability of their continuing.⁴¹

One of the questions in a statistical study of the entering freshmen in the fall trimester of 1960, was: "Assuming that it was financially possible for me to do so, my attitude toward continuing my education throughout eleven months of the year could best be decided as 'strongly favourable', 'moderately favourable', 'neutral', 'moderately unfavourable', 'strongly unfavourable'." Naturally, those students who had already expressed their intention of attending year-round showed themselves as: strongly favourable (63.5%) or moderately favourable (25.1%). Of the 930 students, however, not intending to attend year-round, 19.1% showed themselves as strongly favourable; 26% as moderately favourable; 17.5% as neutral; 25.4% as moderately unfavourable; 11.4% as strongly unfavourable; (.5% did not answer).⁴²

It appears, then, that a year-round calendar is favoured by a majority of students, even if they themselves, do not intend to study the year-round. The year-round calendar may also attract new students: since its inception at the University of Pittsburgh, out-of-state freshmen have increased from 14% to 26.4% of the student body.⁴³

Acceptance by students already in the university at the time a change to year-round operation is announced may be slower, as the following passage shows: "Students most active in university organizations were in favor of the plan almost from its inception; the students in general, however, accepted it more slowly. This attitude might be explained by the traditional conservatism and conformity of students in general. However, when the decision to adopt the calendar was announced, student acceptance grew and was exemplified by the enrolment in the third term, which was far larger than the most optimistic prediction ... Even as late as one week before registration a maximum of three thousand students was expected to enroll ... Actually, 5,026 registered."⁴⁴

Considerably more than one-third of the student body, then, registered for the third term. That this is not peculiar to the University of Pittsburgh may be seen from the results of two surveys

undertaken at Florida State University where a split third trimester system of year-round operation was instituted in the fall of 1962. The first survey showed that 3,362 (34%) of the 9,645 students replying intended to take both summer terms, while 2,006 (20.9%) intended to take one or other. These figures were corroborated by the second study when 38.9% of respondents said they would attend both terms and 20.4%, one or the other. --

The studies undertaken by the University of Pittsburgh enable a composite picture to be drawn of the student who attends the third term:

This initially constructed student is an older male who is enrolled in an undergraduate, goal-oriented or pre-professional program. He is an upper classman who in any term normally carries a heavy credit load. His home is close to the University, and he has to drive to classes. He normally does not participate in formal student activities. He feels that course offerings during all terms were adequate to his objectives. He has a favorable opinion of the trimester program, and because of this program he will reach his vocational and educational goals at an earlier date. He also feels that the trimester calendar has considerably improved his chances for continuing his education beyond the baccalaureate degree. --

Students attending year-round are neither more nor less clever than those attending on a two term basis, nor are they using the third term as a means of taking a lighter load of course credits. It was found, however, that male students in the School of Liberal Arts attending three terms, had a significantly higher performance average than those attending two terms. It was hypothesized that this might be due to motivational factors rather than other characteristics. --

Other student characteristics and attitudes

It is impossible to list all the information contained in the various statistical studies carried out by the University of Pittsburgh. The University, however, in a paper announcing the publication in 1961 of the study entitled *Characteristics and Attitudes of Students Attending the University of Pittsburgh Under the Trimester Calendar*, included a synopsis which will be quoted below.

This statistical study was based on a stratified random sample of the student body which was divided into two groups — those attending three terms, those attending two terms. Approximately 1,500 students were in each group; about 60% of the questionnaires were returned. Forty variables were investigated under the headings, biographical, geographical, academic, economical, and familial, to discover whether any relationship existed between them

and the main variables of sex, school enrollment, degree status, term attendance, and spring attendance. Results were transferred to IBM cards for analysis and a Chi Square analysis employed in order to determine significant relationships. These items of interest were noted:

- "1. Sex: more males attended the spring term than could be expected by chance, and more males than females are choosing the three-term sequence.
- "2. Age: older students are more likely to be in the three-term sequence. There are more older students in the spring term.
- "3. Residence: students living at home are more likely to be in the three-term sequence; more students attending the spring term live at home; the closer the student lives to the campus, the more likely he is to attend all three terms. The exception, as would be expected, is the foreign student.
- "4. School of Enrollment: spring term attendance is as expected by chance in the Schools of Education and Business Administration. It is slightly higher than expected in Engineering and Mines and the Academic Disciplines (Graduate); it is lower than expected in the School of the Liberal Arts and the School of General Studies.
- "5. Credits Left toward the Degree: the closer the student was to his degree requirements, the more likely he was to attend the three-term sequence. However, the people who began their careers at Pittsburgh under the trimester calendar are more likely to go the three-term sequence also. (And those people would be, at most, first-semester sophomores.)
- "6. Quality Point Average as Reported by Students: little relationship appears between measured ability and three-term attendance. However, the three-term student does take a heavier load and still keeps his grades up. While not statistically significant, the study does indicate that the poorer student (lowest Q.P.A.) is not as likely to attend the spring term.
- "7. Annual Family Income: the lower the estimated family income, the more likely the student is to attend the spring term. There is a general trend toward those students with low or middle incomes attending a three-term sequence more frequently than would be expected by chance.
- "8. Source of Direct Educational Expenses: if the parent pays the bill, the student is more likely to attend the two or three-term sequence; if he is on a fellowship, he is more likely to attend three terms. If he is paying his own expenses, he is more likely to go on a two or one-term sequence.
- "9. Activities: the students who kept the same pattern of informal activities (dating, hobbies, sports) were less likely to attend the spring term; those who did attend reported a reduction in informal activities. The relationship was highly significant. Formal activities (University sponsored) did not relate to terms of enrollment.
- "10. Military Status: veterans are more likely to attend three terms; students with educational deferment are more likely to be on a two-term sequence.
- "11. Motivation: from every indication, the more strongly motivated the students are, the more likely they are to attend the three-term sequence. Those who have attended three terms are more likely to say they will enroll in the same sequence next year." 47.

Student maturation

There are those who feel that a year-round calendar will deprive the student of an integral part of a university experience — the long summer vacation. They feel that this is an essential part of the student's maturative process, and one that he should not be without.

Dr. Grayson Kirk, president of Columbia University, disagrees:

One trite argument sure to be raised is that college students need long summer vacations for reflection and maturation during the transition from adolescence to adulthood. It is a lovely theory, and someday students may even get around to putting it into practice. Pending the millennium, they will ignore the good books that professors wistfully assign for summer reading. They will continue to work at strong-back jobs that contribute nothing to their intellectual development or to waste the vacation on activities that prolong adolescence rather than promote maturity.⁴⁸

The ideal of a long vacation period during which the student is able to read and think and review his learning from the previous year, is even less likely to occur in Canada, according to Dr. Kirkconnell of Acadia University: "... it is assumed that all Canadian students will spend the four months of the summer vacation in full-time non-academic employment, earning perhaps one-half of the cost of their next year at University. One disastrous result of this situation is that they have neither the time nor the energy for vacation-time study and return in the autumn with nothing learned and much of their earlier course work forgotten."⁴⁹

It has been noted above, that it is in any case, the maturer individual who is most likely to attend the year-round, and, in practice, there is nothing in a year-round programme to prevent a student from taking a holiday should he feel he needs one. Dr. Hatch of the U.S. Department of Education, feels that it is only right that maturer persons should be given the opportunity to accelerate. "If it is good educational practice to encourage qualified students to enter college early — and there is no evidence to suggest that it is not — it would seem equally desirable to advance these students faster throughout their college careers and to graduate them sooner ... Earlier entrance of gifted and industrious students into the graduate school or into the world of affairs would seem logical and desirable because they should be as ready for these experiences as they were for the earlier ones."⁵⁰

Apparently many students would agree. In 1959, 30% of the freshmen entrants to the University of Pittsburgh indicated that the year-round calendar was an important reason for their selecting the University. This number increased to 50% in 1960.⁵¹

Student costs

This problem looms large in any discussion of year-round education. As noted above, it is a generally accepted fact that Canadian university students earn money during the summer months in order to help finance their way through college. In theory, these students would be unable to attend year-round unless they were lucky enough to have wealthy parents.

In the U.S., however, this has not proven to be so. In an address to the 1960 annual meeting of the Middle States Association of Collegiate Registrars and Officers of Admissions, an administrative officer of the University of Pittsburgh had this to say about student costs: "The University had promised aid in whatever amount was necessary to enable students with demonstrable need to attend the third term. This promise was widely publicized. However, not nearly so many students applied for aid as had been expected. It could be that the more affluent students attended the third term, but as yet there is no factual evidence to support this theory."¹⁴

The factual evidence when it did come, denied rather than supported the theory. A 'highly significant' relationship was found between family income and third term attendance. The *lower* the income the *more likely* the student to attend.¹⁵ (Those students, however, who finance their own living expenses, and/or direct educational expenses, are more likely to attend for only one or two terms — which terms these will be are distributed on a chance basis.¹⁶)

The reasons for this relationship are uncertain. It was noted that students from lower income families are more goal-oriented (i.e., engineering, geology, etc.) while those with higher income backgrounds tend toward liberal arts and academic disciplines. It is possible that a motivational factor might come into play here.¹⁷ In addition, it may be presumed that as a lower income family is likely to have less money available for educational purposes, it is necessary for the recipient to conclude his education as soon as possible.

The idea of borrowing money to finance one's way through an accelerated year-round programme of education has been put forward as a good idea for the student, both academically and economically. It has been shown that in the U.S., at least, a student borrowing money and completing his first degree in 2½ years is much ahead of the student who works summers. The same should hold good in this country. A student is lucky to net \$1,000 in a summer.¹⁸ By borrowing money and completing his degree one

year earlier he should earn an average of \$4,836 in his first year of employment.⁵⁷ He, thus, would be more than \$1,800 ahead.

Students at the University of Pittsburgh were asked about their attitude toward borrowing as though the University had funds available on a long-term basis they were not often requested. This proved somewhat surprising as more than 56% of the respondents held a neutral or favourable attitude toward borrowing. Generally, those from lower income families tended to favour the idea while those with higher income were neutral or rejected it. Students responsible for all their expenses were against it.⁵⁸

The Pittsburgh study concluded that "... it appears that factors other than financial ability influence a student's decision to attend two or three trimesters."⁵⁹ This was further borne out by the answers to the question "I am not attending the University during the spring trimester, and my major reason for not attending is ...". More than 53% did not answer the question. Less than 12% said it was because they needed money for the following year.⁶⁰

Should a student find it necessary or preferable to take time out to earn money a year-round calendar will not prevent him. In fact, as the 1961 Michigan report noted, "the change ... to a truly continuous performance would increase rather than decrease the opportunity for a particular student to drop out for an occasional period of work should he find it necessary."⁶¹ The structuring of courses under a year-round calendar would make it easy for a student to take any term out and, should he wish, still accelerate when he returns.

Faculty and student fatigue

There appears to be some disagreement as to whether this should present a problem or not. One U.S. observer in raising the question of faculty fatigue, noted: "This question is prompted by our experience with the more or less continuous operation of some colleges when the veterans returned from World War II ... The reply of those who have studied this experience and the larger problem is that a faculty does not need a rest as badly as it needs an improvement in its remuneration."⁶²

At the 1961 Conference on Year 'Round Education at the University of Pittsburgh, one guest asked, "How do you keep the faculty member from teaching himself to death?" Answers ranged from specific measures such as those at Michigan State where no member of faculty may teach more than five out of six successive

terms and many teach only four out of six, to Pittsburgh where the third term is taught on a strictly voluntary basis with the departmental chairman preventing any member for over-teaching to the detriment of his health or his subject.⁶³

This applies equally to the idea that year-round operation would damage research activities. In fact, due to the higher level of financial compensation received by the faculty, it appears more likely that they would be in a better position to carry out independent research in the time at their disposal. For, under the regular two-semester system as Ruml and Morrison note, "due to an intolerable level of compensation, the long vacations and the conventional sabbatical year, though respected as ideals have in fact, unfortunately, largely lost their function. They no longer serve as ways of keeping the members of the faculty alert, in close contact with their subjects and their colleagues, with time to think, to discuss and to write without the pressure of assignments for which they receive specific compensation or grants."⁶⁴

The problem of student fatigue — like faculty fatigue — is an individual matter Pittsburgh believes, and the student should know his own limitations. It was pointed out, too, that year-round programmes are generally more flexible than regular semester calendars, and allow the student a greater degree of latitude for independent decision on the load he wishes to carry.⁶⁵ Regarding student fatigue, Grayson Kirk noted: "Physicians and psychiatrists assure me normal youngsters can take the three terms in stride. During World War II and a few years afterward, many students were on a forty-eight week schedule and showed absolutely no ill-effects from it. And the level of performance never was higher."⁶⁶ It has also been noted that many graduate students have studied the year-round, without seemingly being any the worse for the experience.

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14. University of Pittsburgh, *Proceedings of the Trimester Conference*, June 1960, p. 7.
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18. "University Development ...", *op. cit.*, pp. 14-15.
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21. University of Pittsburgh, *Proceedings of the Trimester Conference*, *op. cit.*, p. 4.
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 18. *op. cit.*, p. 35.
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 20. Quoted in Fund for the Advancement of Education, *op. cit.*, pp. 35-36. An account of experiments with class size may be found on pp. 35-42.
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CHAPTER V

More Problems Reviewed

Operating and changeover costs

Changeovers are expensive — expensive both in time and money. For this reason many institutions are reluctant to disturb the *status quo*. This is particularly so in the realm of calendar changes which have far-reaching effects on the entire university community — and a change to year-round operation would be no exception. Dr. Hatch, however, has this to say: "Since a calendar change [to year-round operation] mints money for an institution in that it does not require an expenditure for new buildings and permits a 50 per cent increase in enrollment and a 33 per cent increase in faculty salaries over a twelve month period, any institution can afford it. Some can not afford not to do it. As a matter of fact, the more desperate colleges become, the more likely it is that they will do this." ^{1,*}

This is putting the matter bluntly, perhaps too much so, for though year-round operation may be successful financially, it appears doubtful that it will *mint* money for an institution. Nonetheless, the fact that it can pay for itself is a point in its favour.

The University of Pittsburgh expected a small loss in the first year of its trimester system. In fact, income from additional fees amounted to \$868,000, while costs rose only by \$475,000 — a handsome profit. The University, however, does not expect to maintain this level as the ratio of income to expense is not direct; e.g., the addition of a few students may not entail any increase in overhead costs — the addition of a few more, however, might necessitate supplying extra classroom space and other facilities, and additional teachers. ²

The major item in the operating budget of a university is faculty salaries. These would increase substantially under year-

* References may be found at the end of the chapter, p. 63.

round operation in proportion to the number of students attending the third term. It was noted in the *Nelson* study that once equilibrium was reached (i.e., when there are equal enrolments in each term) salary expenses would increase by 50 per cent -- assuming teaching loads and student-faculty ratios remain the same. Receipts from tuition fees and room charges, however, would increase by 58 per cent. Though administrative costs per student would decline, there would almost certainly be need for additional staff both at the administrative and clerical level. In addition, automatic machine installations used in handling registration details would most likely require augmenting. Concluded the report: "In short, operating budgets would show a sharp increase in income, a decline in costs per student, and a substantial increase in total budget requirements because of enrollment increases."³

There would be no savings in supplies as the need for these would increase in direct proportion to the increase in the student body. In addition, maintenance costs would most likely increase somewhat, even though maintenance staff are normally on a year-round basis, as it would probably be necessary to augment the staff and reschedule their operations to include nights and weekends. The director of physical plant at the University of Pittsburgh, however, felt that through the trimester plan would create some new problems for his staff these could be handled satisfactorily. Even with some increase in staff, he believed that the extra expense would be much less than the increased use of facilities -- i.e., the maintenance cost per student would decline.⁴

Capital costs would certainly decline markedly under year-round operation. This is the major *economic* rationale for the plan. As noted previously, it now costs \$7,000 to provide the facilities for one student place, this would mean a capital outlay of \$10,500,000 for 1,500 additional places. Under year-round operation if the number of students using the same physical facilities increases by one-third, the cost per student place declines to \$5,250. The *Nelson* report claims that under the balanced trimester plan (see Chapter III), it is possible to accommodate 50% more students; should this theoretical perfection be attained, the cost per student would be only \$4,666.

Equal enrolments

Both the *Nelson* and *Easton* reports as noted previously, show that the most efficient year-round calendar is one that has equal enrolments each term thus maintaining the college under full-operating capacity at all times.

Some believe the difficulty of obtaining equal enrolments to be so great that it destroys the feasibility of year-round operation. Dr. Love of the University of New Brunswick, for example, though believing that some calendar reorganization is both necessary and possible, had this to say:

It is evident that a very large potential freshman class would be necessary to make possible equal numbers entering at three times during the year. The whole pattern of Canadian education is arranged for College to begin in September. It is very doubtful indeed that equal entering classes could be established in January and April. Since three equal registrations per year are required to ensure efficiency this factor alone would seem to eliminate the trimester system as applicable here.⁵

Though he later softened this judgment somewhat, by recommending the establishment of a committee to study the trimester system as it would apply to the University of New Brunswick, the paragraph quoted does show the degree to which the question of equal enrolments is considered a problem. It appears to this writer, however, that to eliminate a system because it may not reach optimum *theoretical* efficiency, is rather begging the question. The standard two-term academic calendar in operation in most Canadian universities, for example, falls short of optimum efficiency due to the number of drop-outs that occur throughout the year — yet this system has been in widespread use for generations. It would seem, rather, that a calendar should be judged on its educational merits; should these be proven, and Dr. Love appears to feel that year-round operation has much to recommend it on this score, then a study should be undertaken to see if it is economically *feasible* rather than ultimately *efficient*. In any case, as the Nelson report notes, "It is apparent from study of Exhibit D, (see page 27 above) for example, that the number of freshmen admitted under a trimester plan with three equal admissions (T3) is so far greater than under a semester plan with one admission (S1) — a 58% increase — that even if equal enrolments in each of the three terms under a trimester were not obtained, it would still be very superior in efficiency to the typical semester calendar."⁶ The University of Pittsburgh as noted above, showed a profit on the third term even though the enrolment for that term was considerably less than one-half that of the first two terms.

In practice, then, it appears that a year-round calendar may be something less than the ultimate in efficiency — short of compulsory acceleration, or prohibition of acceleration, and/or perfect articulation with the high schools — but surely this does not mean

that it should be discarded on this account? The answer appears to lie in attempting to equalize enrolments as much as possible by offering some inducements to make it more attractive for the student to enrol in the third term.

Some suggestions to this end were made at the 1961 Conference on Year 'Round Education. Dormitories, for example, could be operated at minimum cost during the third term and the student be charged a lower rental. Similarly, where space is short, preference could be given to the student who enrolled in the third term. In addition, a discount on tuition could be offered, or a special credit system be arranged.⁷

Florida State University, for example, has taken a number of steps in this direction: It received permission from the State Board of Control to place its 12-grade university school under a trimester system which gives it perfect articulation with the University.⁸ It has also, both a total and split third term in which some courses are given at double speed. This enables students who wish to accelerate but are unwilling to study all summer, to do so and still have ten weeks holiday; it also makes room for more teachers and high-school graduates in the second term (see below, p. 62). The curriculum is so structured, particularly with regard to required courses, that it makes it advantageous for the student to attend the third trimester. Information sessions have been held with student leaders and many other students, in order that they may be fully acquainted with the advantages of the plan. Housing priority is given to students enrolling for the summer term. Priority for scholarship funds are also given these students. In addition, through continuing contacts with junior colleges, high schools, and the wide dissemination of literature, prospective students are informed of the advantages of attending the summer term.⁹

There are certain advantages inherent in a year-round calendar which, in themselves, would help the problem of equal enrolments. Students, for example, who are not accepted in September due to lack of space, need only wait for one or two terms -- instead of one year -- before applying again. Similarly, with those who may have failed in one or two subjects in their matriculation, they could write these examinations again at Christmas or April and if they pass, commence college immediately rather than waiting until the following September.

Florida State, however, believes that obtaining equal enrolments will only be a passing problem that will cure itself once students become more used to the idea of studying during the summer months and to the concept of year-round operation.¹⁰

Summer schools

Most major colleges and universities today have some courses scheduled during the summer months, and these have come to be accepted as an essential part of a university's operation and responsibility. This, perhaps, is especially the case in Canada, where large numbers of public school teachers rely on the universities to provide special courses of instruction during the summer so that they may proceed to higher degrees. The question inevitably arises as to how this responsibility can be carried out should the university adopt a year-round calendar.

So important is the consideration of this problem that, in one case at least, it has played a major part in a decision being reached *not* to place an institution onto year-round operation at this time.

President Saunderson, of the University of Manitoba, writing in the February 8, 1963, issue of the *Winnipeg Free Press*, in reply to a letter advocating year-round operation of colleges that had appeared in the January 22nd issue of that paper, noted that the subject had been under study by a committee of faculty at the University of Manitoba.¹¹ The committee had rejected the idea on the ground of serious practical difficulties; most of which appear to be bound up with the operation of the summer school.¹²

Dr. Saunderson's article effectively presents the problem as seen by the faculty, of incorporating a summer school programme into a year-round calendar: Noting that there are presently some 2,700 students in the major faculties on the Manitoba campus, he estimated that under a trimester plan — if they were fortunate enough to be able to obtain an even distribution — there would be approximately 1,800 students in each of the three terms. This is an obvious saving in space. When, however, some 3,200 summer school students (1962 count) are added to the 1,800 already on-campus for the third term, there would be a total of 5,000 students. This number would require many more facilities than are now available or necessary.

The committee examined three possible methods of solving the problem: 1. To do away with the present seven week summer school. 2. To inquire whether the ten-month public school schedule could be shortened to enable teachers to attend the third trimester if it were put into operation. 3. To hold the present summer school in buildings other than those of the University. All three were discarded. The first, on the grounds of being unfair to both the public school teachers, and society generally. The second, for receiving no support as the public school level. The third, due to numerous practical difficulties, such as lack of suitable buildings

and facilities, lack of library resources, difficulty of student mobility, and so forth.

Dr. Saunderson points out that a considerable difference exists between the Canadian and U.S. situations. Firstly, most U.S. teachers have a first degree before they commence teaching; this means a much smaller number of students entering summer school than regular programmes — the reverse of the situation at Manitoba. Secondly, many institutions in the U.S. have more "spare" classroom space than usually exists in this country. (Manitoba utilizes its major classroom space for an average of 35 hours out of 40 teaching hours per week, compared with the generally accepted use factor in the U.S. of 30 hours). Thirdly, the location of the University in a harsh climate, where there is already a high degree of winter unemployment, makes it undesirable from both the student's and society's viewpoint that there should be a comparatively large number of students entering the labour market at times other than the summer. These were the reasons why the committee recommended that the University should not adopt a year-round calendar.

In contrast to the above, the faculty committee at the University of Michigan, was in favour of adopting a year-round calendar *because* the University had a large summer school:

To a considerable degree our University is already on year-round operation. Ten thousand students attend our summer school though it operates only for eight weeks. Offices and laboratories in many departments and professional schools are continually occupied. Graduate study and sponsored research continue throughout the year ... Year-round operation, accordingly, is already the practice in many areas, and will become more widespread. The closing up of over half the university for three months is both expensive and inefficient. It would be more in keeping with the development of the University concept to make the facilities of the University available on a year-round basis.²³

Admittedly, the University of Michigan did not have more students attending its summer school than its regular courses and the mechanical problem of incorporation still remains, but the three possibilities considered by the Manitoba committee do not exhaust all areas of solution. It has already been noted, for example, that Florida State University divides its summer programme into two parts. In both of these some full courses are offered at increased speed — 65 minutes classes, five days per week, compared to 55 minutes classes, three days per week at regular speed. A Canadian university by adopting a similar system could enable a student to complete an extra term's work (and still have ten weeks holiday) while still holding a special summer programme for public

school teachers. Should such accelerated courses be considered academically unsound, a full programme of courses could be offered along the lines of Saskatchewan's Intersession period, or Michigan's split-trimester system.

Dr. Saunderson's point that there are in proportion more secondary school teachers attending summer programmes in Canadian institutions than in the U.S., is well taken. By no means all, however, of those attending summer schools are teachers. A rapidly growing trend is apparent in which members of the regular student body and other non-teachers are attending summer schools. This is apparent at Manitoba itself, where, though 68% of the 1960 summer school were teachers, this was a slightly lower percentage than 1959, even though total summer school enrolment had increased by 17.3%.¹⁴ (This trend is fortified by the figures for the University of Saskatchewan. In 1958 the number of summer students registered under Education was 1,265; under other categories, 1,823. In 1961, having decreased for the previous two years the figure for Education was 1,382, an increase of 9.3%, while other classes had increased to 2,739, up 50.3%.¹⁵)

In addition, as noted above (p. 59), it is unlikely that the student body would be spread evenly over the three terms, especially in the early years of a year-round programme. This would initially enable the non-teachers to attend a full term while there would still be room for the teachers. This has been the experience at the University of Pittsburgh where summer school offerings have been incorporated into the year-round programme.

The problem of incorporating summer programmes was recognized at the 1961 Conference on Year 'Round Education, where it was noted that institutions have a responsibility to provide summer courses for personnel in the school systems. It was agreed, however, that "the problem is not insurmountable."¹⁶ Nor, does it appear to be so.

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1. Hatch, W. R., *Quality and the College*, *op. cit.*, p. 111.
2. University of Pittsburgh, *Proceedings of the Trimester Conference*, *op. cit.*, p. 9.
3. Nelson Associates, *op. cit.*, pp. 37-40.
4. University of Pittsburgh, *Report of Committee on a Trimester Calendar*, *op. cit.*, p. 17.

5. Love, R. J., *op. cit.*, pp. 15-16.
6. Nelson Associates, *op. cit.*, pp. 29-30.
7. University of Pittsburgh, *op. cit.*, pt. 3, p. 2.
8. Florida State University, News Bureau, news release dated May 11, 1962. Students above Grade 8 will be allowed to accelerate if their marks warrant it, thus entering university at a younger age.
9. Florida State University, *Steps Being Taken by Florida State University in Encouraging Uniform Level of Enrollment Under Year-Round Operation*, undated, *passim*.
10. *Ibid*, p. 1.
11. Saunderson, H. H., "A Better Use of University Facilities — President Saunderson Replies", *op. cit.*, pp. 13 and 22.
12. The writer has not seen the faculty report and consequently does not wish to infer that this was the only reason put forward by the committee for not adopting a year-round calendar. Dr. Saunderson, however, dealt almost exclusively with this aspect in his article.
13. University of Michigan, *Report of Commission ... op. cit.*, p. 9.
14. University of Manitoba, *President's Report, 1960-1961*, p. 154.
15. University of Saskatchewan, *Annual Report, op. cit.*, p. 52.
16. University of Pittsburgh, *op. cit.*, p. 7.

Summary

In Chapter I the 'crisis of numbers' facing Canadian universities was outlined. It was noted that the statistically based predictions are that in the ten years 1960-61 to 1970-71 enrolments will grow from 114,000 to 311,600 students — an increase of nearly 200,000. This means that by 1970-71 there will be more than three times the number of students enrolled in Canadian universities than in 1959-60 — yet no comparable growth in facilities is forecast. It is quite possible that these predictions may be low. In the United States more than twice the percentage of those in the college age group attend college than in Canada. Should the situation here approach that in the U.S., more than 500,000 students will be seeking a higher education by 1970-71.

It was suggested that there are three possible methods of procedure open to the colleges. One, to continually increase admission standards. Two, to enlarge and increase physical facilities. Three, to make more effective use of existing facilities. These methods could be used separately or together. Certain limitations are

present, however: there is a limit to the extent admission standards may be raised; this limit being the result of social, moral and political factors. To try and cope with the situation by this means would simply be an acknowledgement that the universities have failed to adjust to the needs of society.

There is also a limit to the extent physical facilities may be increased; this limit is imposed by the factors of space, time and money. Much can be done, however, to make more effective use of existing facilities — either by increasing the number of hours and/or days in the week that classroom space is utilized, or to use the facilities on a year-round basis. The second possibility forms the subject matter of this study.

In the second chapter a definition was put forward, and a review made of some popular misconceptions regarding year-round calendars. First, that they entail the faculty teaching all year, and/or students attending all year; next, that historical practice shows that four academic years from junior matriculation is the time necessary to acquire an undergraduate degree. Examples were given showing that both faculty and students have accepted and will accept year-round operation and that year-round calendars are in operation in thirty-eight institutions in the U.S. of all types and sizes, with a further eighty-five considering changing over. This, however, did not mean that there were no problems connected with year-round operation, some of these would be outlined later.

The rationale behind the concept of year-round operation as given by Chancellor Litchfield of the University of Pittsburgh, a foremost proponent of the idea, was next reviewed. He listed three academic reasons: 1. Year-round operation presented a new approach to the problem of encompassing the enormous growth in knowledge. 2. It brought the learning and maturative concepts closer together, enabling mature students to attain professional status when they were at the height of their strength, energy and creativity; this benefited all of society. 3. It enabled any student who wished to do so, to acquire both a liberal and professional education in the time normally required to obtain one or the other. This would give to society a sufficient number of qualified individuals to maintain it in a competitive position *vis a vis* other societies.

The administrative advantages to year-round operation noted by Dr. Litchfield, were that it made wiser and more efficient use of the resources of higher education — principally, physical facilities, staff and money.

A description of some year-round calendars was given in Chapter III with an account of two theoretical studies that enabled

a comparison to be made of different types of calendar systems. Both showed that the most efficient calendar was one that divided the academic year into three terms with equal enrolments at the beginning of each term. To the extent that this requirement was met the more efficient was the calendar, but, in any case, the three term or trimester system was much more efficient than the regular two semester programmes.

A review was then made of trimester, split-trimester, quarter, and co-operative systems of year-round calendars that are in operation in various colleges and universities in the United States.

In Chapter IV and V some of the problems connected with the institution of a year-round calendar were outlined and reviewed under the headings of faculty acceptance, the procurement of additional faculty, better use of existing faculty resources, curriculum revision, student acceptance, student characteristics and attitudes, student costs, faculty and student fatigue, operating and change-over costs, equal enrolments, and summer schools. Use was made of studies issued by various institutions already operating on year-round calendars to determine how they avoided or overcome these problems. It was suggested that no calendar system should be rejected because of possible initial operational difficulties but only if it were shown to be academically unsound or economically unfeasible.

Conclusion

In this report no attempt has been made to suggest that a year-round calendar is *academically* more or less sound than any other calendar system — that is for others to decide. If one may judge by the long-standing arguments that continue to revolve around the relative merits of the regular two-semester and quarter systems there is not likely to be any definitive answer to this question in the near future.

Certain conclusions, however, may safely be drawn from this examination of the year-round operation of colleges and universities: One is that the system can and does work; another, that a year-round calendar is more efficient both in terms of numbers produced and in an economic sense, than the calendar systems now generally found in Canadian institutions of higher learning.

It is not intended to suggest that all of these institutions should immediately change over to year-round operation, for many are perfectly capable of fulfilling the demands made upon them under their present calendar system. For others, however, the situation

is different; increasing enrolments are pressing hard upon their available facilities and there is every indication that this pressure is likely to increase rather than diminish, in spite of rapidly revised and ever-larger building programmes.

There is a limit, both in time and money, to the extent that new facilities can be provided. For the institutions facing this dilemma — and there is likely to be a growing number of them — the logical conclusion appears to be to make more use of those facilities now in existence and in the planning stage. Year-round operation may be the only method whereby they will be able to continue to successfully serve the growing educational needs of society.

The regular Canadian academic year — which is several weeks shorter than its counterpart in the United States — should lend itself particularly to the adoption of a three-year term, or trimester system of year-round operation, with each term 14-15 weeks in length. Though some problems are involved in any calendar change — and some have been examined in this report — there appear to be none in changing over to a year-round system that cannot be successfully overcome or, perhaps, avoided altogether in view of the experience of those institutions in the U.S. that have already made the change.

In one particular only — i.e., summer schools — does the Canadian situation differ somewhat from that in the United States. Due to the proportionately greater number of secondary school-teachers attending summer school programmes in this country, it is possible that under year-round operation a problem could arise in maintaining these very necessary special programmes at the same time as a summer term of regular course work. It should be stressed, however, that this would only become a problem when and if the numbers of those attending the special programmes when added to the number of regular course students, exceed the facilities available to meet them.

This is unlikely to occur in the early years of any year-round calendar as the number of regular students attending the third or summer term would be quite considerably smaller than those attending the other two terms. It can be made even more unlikely by instituting a split third-term system, similar to that adopted by the University of Michigan and Florida State University. By being offered courses at double speed during the first half of the term — as well as at regular speed throughout the entire term — students who wished to do so, could still accelerate, have ten weeks holiday and, at the same time, make room in the second half of the term

for those taking the special programmes. This is only one method of avoiding the difficulty — the academic world is noted for devising ways and means to surmount obstacles and other methods will most surely be found in the period before any institution is faced with a problem regarding its summer school.

From an economic viewpoint, year-round operation obviously requires a larger budget than the regular two-term system. Income however, should show a proportionately greater increase, due to the more effective utilization of facilities. Any budgetary increase would, in any case, be small in comparison to the increase in capital expenditure that would be required under a regular calendar system to house the additional number of students provided for under a year-round calendar.

One major advantage to a year-round calendar system that has received only passing reference in this report, is the more effective use that is made of the faculty. The faculty of a university is an irreplaceable resource, the more effective its utilization, the greater the benefit to society. The experience of those institutions on a year-round basis has been that without compulsion of any sort, a large percentage of their teaching staff has volunteered to teach the extra term. Each institution has made its own arrangements so that no member may teach more than one or two years consecutively; at the end of this time a lengthy vacation period comes into effect during which he may catch up on his research, travel, or rest.

In conclusion, then, it appears that there are no overriding problems connected with a changeover to year-round operation. As enrolment pressures grow this is one method whereby Canadian universities and colleges will be able to meet the ever-increasing demands made upon them.

Though recommendations are beyond the scope of this paper, it is suggested that in view of the increasing urgency of the situation, standing committees of faculty and administrative personnel be established in those institutions where the need is most pressing and where they are not already in operation. The purpose of these committees would be to continually review the need for increasing the utilization of facilities through calendar revision. To aid these committees in their work, the Canadian Foundation for Educational Development would be happy to establish a clearing house of information in this area should the need be made known. This would serve to keep those concerned informed of the growth of knowledge in the field and the means and methods adopted by various institutions to meet the 'crisis of numbers'.

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